AMERICAN GAS ASSOCIATION MONTHLY

Vol. VIII No. 2

FEBRUARY, 1926

Growing!

MANUFACTURED gas companies in the United States sold 421 billion cubic feet of gas in 1925, a new high record. In the last ten years sales have more than doubled.

Prepare for Safety

IS YOUR interest in safety measures aroused only after a serious accident, or do you endeavor to utilize all the safety practice literature available to the industry?

Two new and valuable A. G. A. safety booklets are now ready for distribution. One shows the precautions necessary to prevent employee accidents of all kinds. The other discusses the best resuscitation treatments.

These booklets are:

OCCUPATIONAL HAZARDS OF THE GAS INDUSTRY. (Report of the 1925 Accident Prevention Committee.)

THE EFFICIENCY OF THE OXYGEN-CARBON DIOXIDE TREATMENT OF CARBON MONOXIDE POISONING. By Cecil K. Drinker, with comments by Dr. J. S. Haldane.

These booklets sell for five cents a copy. Address your inquiries to Association Headquarters.

A Safe Worker Is a Loyal Worker

AMERICAN GAS ASSOCIATION MONTHLY

342 MADISON AVENUE, NEW YORK, N. Y.

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Editor

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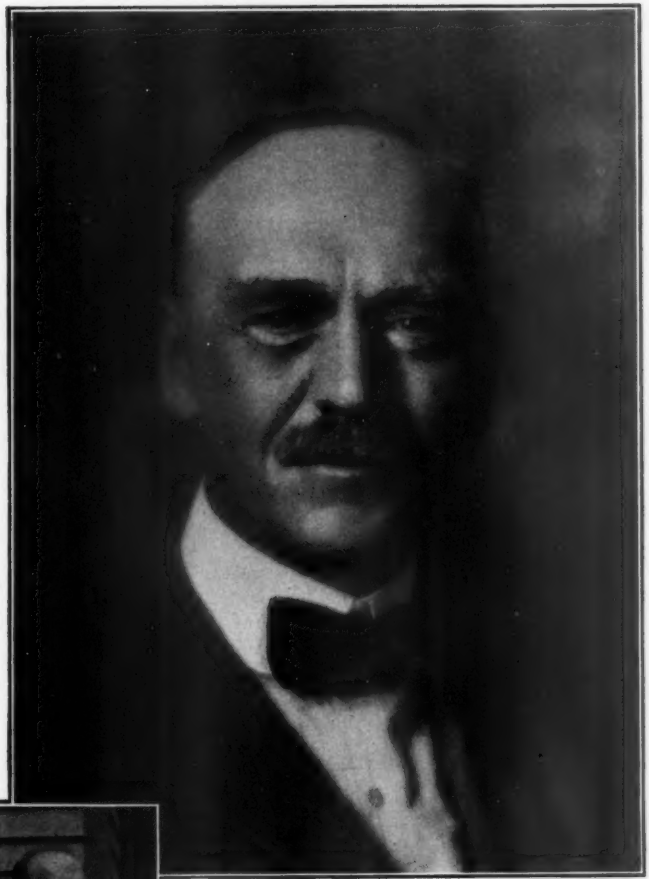
Our Own Who's Who



IX

Henry M. Brundage

Born, White Plains, N. Y., 1872; entered gas industry as junior clerk with the Standard Gas Light Company of New York in 1894; appointed Chief Accounting Officer of the United Light & Power Company in 1901; transferred to general office of Consolidated Gas Company of New York in 1903; has been successively Chief Accountant, Controller, Assistant Secretary, Secretary, and is now one of the Vice-Presidents, having charge of accounting, taxation, rates, etc.; is first Vice-President of the Empire State Gas & Electric Association, Treasurer of the American Gas Association, and Past President of the Society of Gas and Electric Accountants; member of Society of Gas Lighting, Illuminating Engineering Society and others.

AMERICAN GAS ASSOCIATION MONTHLY

Vol. VIII FEBRUARY, 1926 No. 2

What are the Facts about Selling Gas Refrigeration?

A Frank Statement of the Obstacles to Be Met and the Practical Benefits to Be Derived from This New Field of Business

By H. DEWITT VALENTINE, Chairman, A. G. A. Committee on Refrigeration

H. D. Valentine

THE efforts of the Committee on Refrigeration of the Commercial Section had been primarily directed towards the compilation of a report which would be almost entirely expository in character, and which, in as simple a manner as possible, would outline the present status of mechanical domestic refrigeration.

This included refrigeration as a whole; a discussion of the technical principles underlying automatic refrigeration units (with special emphasis laid on present gas-fired units), and the probable effect on gas send-out. The whole report, it may be stated, was written in an effort to create enough interest in the subject to warrant further research and development, which would naturally be manifested in the appearance of additional gas-fired units. The result would logically be a very materially increased merchandising program involving domestic refrigeration units.

The result of this appeal for interest was more than gratifying. Apparently, judging from inquiries received, no use for gas can be more timely and more important than its application to refrigeration.

There are, however, merchandising difficulties which are far more important than the present necessary need for engineering development work and mechanical refinement of appliances. Such development and refinement naturally follow in the wake of successful merchandising. I need only mention the radio to show that, if the market exists and complicates itself because of competitive influences, then refinement and development must, of necessity, follow, in order to further increase individual merchandising possibilities. We have a parallel situation regarding automatic electrical refrigeration equipment as it exists today.

Our merchandising problem, in its entirety, may be divided into three phases. Our immediate concern, very naturally, is the public who are, in the last word, our customers, and interest for refrigeration equipment in general must be created in their minds to that extent where they become sufficiently informed on the

subject, so that they can ably and intelligently differentiate between what is good practice, and what is not good practice, and which feature will, or will not, designate an appliance suited to their individual needs.

The foregoing is essentially the task of the individual gas company, and the gas industry in general, through such organizations as the American Gas Association and the various state associations. After all, our contact with the public must of necessity be secured by the individual utility serving any certain community.

On the other hand, it is unreasonable to suppose that such gas companies could take upon themselves such a task if they themselves were not sufficiently interested to warrant an effective exposition of refrigeration to their customers and the public.

Educating the individual gas companies to a point of effective enthusiasm, therefore, becomes the second phase of our merchandising problem, and to the writer, at least, it is of prior importance to the direct education of the public; for, if we thoroughly infuse the fundamentals of refrigeration with gas into the various correlating operating units of a gas company, it will naturally follow that the public served by this company will absorb to a large extent that company's ideas. For this one purpose in particular, the Committee on Refrigeration was careful to make their preliminary report not only inclusive, but fundamental, and easily understood.

Possibly the most important part of our merchandising problem is that merchandising intermediary, be it manufacturer or distributor, who serves the wants of the public and the gas company by offering to them a suitable piece of merchandise or appliance which, when used with the gas company's product, will fulfill the needs, desires, and wants of a discriminating public.

At the same time, in the present state of refrigeration with gas, it is unfair to expect any manufacturer or distributor to invest time and money in the construction and development of a unit for gas refrigeration purposes, unless that manufacturer or distributor can see a very definite and possible return on his investment.

In other words, he will not enter this field unless he can see that the public has been sold on this project to the extent where they are actually wanting without it. His interest in our project is entirely dependent, first and foremost, on the activity of the various gas companies and gas associations in educating the public, so that, in the end, refrigeration with gas has that utility wherein they actually ask for it.

FOR THE BUSY READER

THE CONTENTS of this article may be summarized as follows:

Gas refrigeration, or gas anything, starts in with a natural handicap against electricity, because the muddy intellects of the multitude are hypnotized by the magic and mystery of electricity. They believe it can do anything. An idiot can push a button or turn a switch and watch the result of the energy he releases. It makes him feel a sort of god in embryo.

On the other hand, the outstanding concomitant to gas, in the public mind, is that it smells.

So the gas salesman's first task is to upset that bug-a-boo.

Then there is the question of advertising. Millions have been spent on electrical refrigeration units, and the "ads" have made their impress on the plastic mind of the public. This has to be planed smooth again.

Then there is the question of price. Gas-fired units cost, in some cases, twice as much as electrical units. The installation is more of a mechanical affair. Many electrical units are self-contained.

There are fifty competing electrical salesmen to one gas.

There is the question of water cooling, which, on account of cost in some localities, or difficulties of supply and disposal, may impose a further handicap.

Inventors and manufacturers are not concerned with developing sand glasses to be used for timepieces, and it is quite possible that they do not know that there is a potential field for gas-fired refrigerating machines.—H. D. V.

It is interesting to state at this point that, within the last year at least, six gas-fired refrigerating units have been developed to a stage where only minor refinements are required before they are in a form to be successfully merchandised. Before such units can be sold, however, an organization must be sufficiently capitalized to warrant certain advertising and promotional expenditures.

Naturally, at this time capital is reluctant to enter a field which is largely speculative, as, for example, the application of gas to refrigeration. On the other hand, various manufacturing concerns marketing high grade gas burning appliances at the present time are anxious to extend their activities to appliances which will not only keep their wheels turning during off-peak manufacturing periods, but which will give their sales organization additional merchandising leaders.

Very naturally, the writer, as chairman of the American Gas Association Refrigeration Committee, is in direct contact with both the inventors, promoters of

A Cold Subject, but the Laclede Gas Light Company and Its Show-Window Herald Warm to It: With Commendable Enthusiasm.

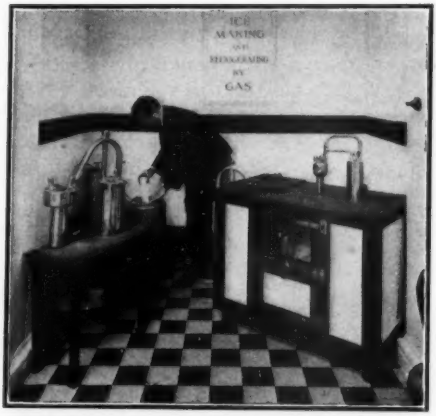


Exhibit of Ice-Making by Gas Which Was one of the Features of the Recent Wembley Exhibition in England.

units and manufacturers who are seeking an additional field. The committee will, in every way possible, attempt to establish agreeable acquaintanceships. It is unlikely that any length of time will elapse before some combinations will be consummated.

Letters have been written to manufacturers of present gas-fired units, and also to inventors and promoters of units which have come to the Committee's attention, asking for a loan of an appliance which will be set up in the laboratory of The Peoples Gas Light & Coke Company for purposes of study and test. Interested manufacturers of gas burning appliances will be invited to Chicago to study these appliances.

Such comparative data will not only be useful directly to the inventor or the manufacturer, but will be very helpful to the gas industry as a whole, to interest the public generally by their exhaustive campaign of publicity, meaning, of course, general information in technical journals, newspapers, and all publications which are active dispensers of news items of general interest.

A GAS COMPANY PROBLEM

These last few paragraphs will be dedicated as an appeal to the gas company itself. Undoubtedly, with the increasing house-heating load of the various metropolitan gas companies, some use must be made of our product to counteract, to some extent at least, the ever increasing peak during the fall, winter, and early spring months.

As has been shown in our report, if every home that is now heated with gas employs gas for refrigeration purposes, the entire connected refrigerating load would relieve the entire house-heating load only to the extent of about 8%. Consequently, we cannot hope to fill up the entire valley caused by house heating through the introduction of gas for use in the domestic refrigerator.

The writer has every reason to believe, however, that owing to better building methods now employed, especially as directed towards proper insulation, it will be only comparatively a few more years before homes will be artifically cooled during the summer months, as well as artifically warmed during the winter months. With this vision on the horizon, it appears that the present time is not any too soon to begin an agitation for the artifically cooled home in the summer.

Using the compression machine to do this is not entirely satisfactory. Noise and a large number of moving parts will limit their use in the home to a large extent. With the absorption or adsorption types of units, absolutely noiseless in their operation, devoid of any moving parts whatsoever, their application in the house-cooling field becomes extremely interesting. From the recent development in large size units of this type, none of which, however, are yet on the market, the writer is extremely optimistic that in the very near future we shall witness considerable advancement in this general direction.

Let me urge all readers who are interested in extending the use of gas for the home and in the industries to think of artificial space cooling. If we are able to put this idea across in the smallest gas company, we will be able to take on

the house-heating load without fear of idle plant equipment due to a poor diversity and load factor.

As far as the future is concerned, it is only necessary to review the records of the electrical industry to prove that the public is becoming rapidly sold on the idea of mechanical refrigeration. Development work on mechanical household machines can be traced back fourteen years, and it is estimated that up to the present $70,000,000 have been spent in this work. Active merchandising of this type of equipment is little more than three years old, but there are approximately 350,000 machines now in use.

In 1926, $5,000,000 will be spent in national publicity advertising, and answers to a questionnaire issued by the Refrigeration Committee of the National Electric Light Association indicate that well over 300,000 additional ice machines will be sold in 1926. These are *electric*, of course. Is it not deplorable that the gas industry cannot seem to show its enthusiasm in this very desirable field?

COMMENT AND SUGGESTION

THE FOLLOWING LETTER from Guy E. Chesnut, superintendent of sales and service of the St. Joseph Gas Company, St. Joseph, Mo., should be read in connection with Mr. Valentine's article as a glimpse of the other side of the picture:

Referring to your letter of December 10th with reference to our experience on merchandising a machine for gas refrigeration in St. Joseph, our experience has been very unsatisfactory.

Through the experience of the Peoples Gas Light & Coke Company of Chicago especially, and from the information we received, we decided to try out the iceless refrigerator manufactured by the ..... Company. We gave them an order for a trial machine on June 26, 1925. Up to this time we have been unable to secure a machine from them.

Right now we would like to figure on 30 machines for an apartment house which is to be built this winter and next spring, but we are unable to do so, and it is possible that we will lose the business unless we can get more information as to what we can expect in the way of delivery. At this time there are no iceless refrigerators in St. Joseph which are operated by gas flame.

We believe that it would be better for the gas industry when anything of this kind comes out, if the article was not advertised until companies like ourselves could expect to buy and receive delivery on them.

A POET SAYS "YES"

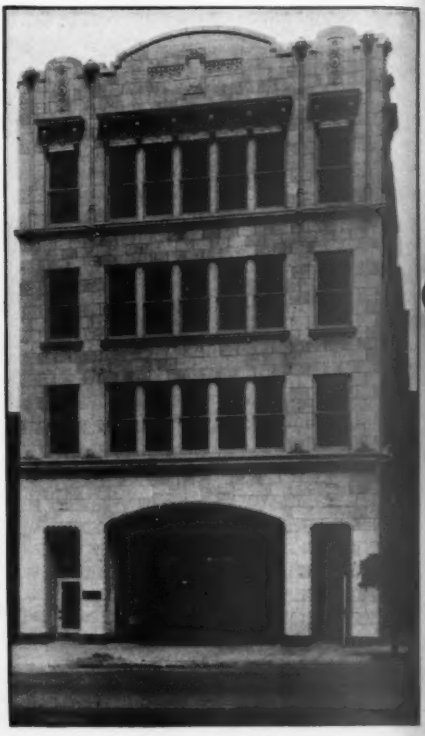
ASSOCIATION HEADQUARTERS recently called for a vote on the new amendment. One member replied in the affirmative, with this further comment:

"Abell knows,
What he says goes."

SHE STOOPS TO CONQUER

International Newsreel

Royalty Accepts Gas—Above Is Shown, Left to Right, the Princess Martha and Her Sister, Astrid, of Sweden. They Are Taking a Course in Cooking in a Housekeeping School in Stockholm. Rumor Has It That Princess Astrid and the Prince of Wales Are to Marry.



Above, Left: New Building of the Northern Union Gas Company, New York City. Above, Right: New Building of the Citizens Gas & Fuel Co., Terre Haute, Ind. Below, Left: New Building of the North Shore Gas Co., Waukegan, Ind. Below, Right: New Building of the Northern Indiana Gas & Electric Co., Hammond, Ind.

Shall We Hold Open House for Uncle Sam?

A National Utility Week in 48 States Considered As a Practical Measure Through Co-ordination of Information Committees

By ALFRED FISCHER, Michigan Committee on Public Utility Information

Alfred Fischer

WHEN the editor of the American Gas Association MONTHLY asked for a discussion of this as a possibility, he did his daily good turn, for he provided the humble author of the idea with the thrill which comes from recognition of effort. The full possibility of such an ambitious plan can be determined only by careful study and consideration of a large number of elements. However, if it is attempted, it will be certain to give the industry some invaluable public attention and also recognition by a few misled authorities, who still exclaim that the gas plants of America will, one of these fine days, be beaten into plowshares.

Whatever the fate of the project to make Open House Week for the public utilities an annual national affair, sponsored by the associations which are dedicated to their welfare, and organized principally through the committees on public utility information, one fact is already established and offered for consideration by the affirmative. That is the certainty that the public is interested in utility operation and that it will visit its public servants and ask about their problems if given an opportunity.

In less than two years since the idea was first introduced, some two hundred thousand persons scattered over these United States have come to gas and electric plants and have learned by contact what they could not have comprehended by months of newspaper reading and listening to speeches. They were the people of Michigan, Illinois, Wisconsin, California, Tennessee and New York. Further, it is understood that, in the next twelve months, the same opportunity is to be offered to the gas consumers in San Juan and Tokio.

This is not to be interpreted as meaning that there were no organized plant visits by the public before the Michigan Committee on Public Utility Information offered its first Open House Week in 1924. Plants have been open to high school students in chemistry and physics for years. Business clubs have inspected new plants and formal openings have been observed. The utility industry has never had a closed door policy.

But it does mean that, for the first time, an opportunity was created to convey to an uninformed public, not only the mechanical and chemical processes of preparing light, heat and power, but also the ramified and endless problems of administration. It means further that full consideration was given to the beneficial effect of such visits upon employe morale, upon the financial program of companies and upon the good will of the press and public generally.

What is the first important element that appeals to the utility executive who is considering an Open House Week? Interviews with many of them show one general reaction. They have found nothing better or simpler that will personalize this vague and impersonal combination of effort, this throwing together of science, business genius, initiative, organization ability, legal and engineering talent which in its composite form is public service.

The state is the best workable unit for organizing Open House Week. Problems of regulation and financing are more or

Plan to Visit—
The Most Interesting Spot in Town
When out-of-town folks come to visit you, or when you go sightseeing by yourself, you always follow the beaten trails through the parks, around the public buildings and the Boulevard.
Next week (Week of October 5) load the family into the automobile or the motor bus and come to visit our plant. It is the most interesting spot in town. Someone will be there to prove it to you.
It will be Open House Week. The huge machines, the immense stocks of material and the variety of other equipment necessary to keep you supplied with abundant good service will be dressed up for inspection. Competent guides will take you around and explain everything.
Tours will be at 2 and 4:30 p. m.
Trips for clubs and other groups can be arranged to meet special requirements.
WASHTENAW GAS COMPANY
"Good Gas Service"

Announcements to Stimulate Curiosity and Interest Should be Run at Least a Week Before the Plants Are Open to Visitors.

less common to all companies within its boundaries. Many states have public service organizations which serve a large number of counties, and they can be organized as a whole. Also, the leading executives are usually in close touch with each other through their associations and information committees. Advertising and promotion problems can be most conveniently handled on this basis. The selection of a desirable date is also a matter for common consideration, since climate and the restrictions imposed by school and club calendars are fairly uniform in each commonwealth.

Economy and simplicity can be achieved by centralizing in one state office the overhead and preparatory work necessary. General advertising and publicity ideas can be assembled and distributed from one source, and a competent man can be trained and placed at the disposal of all companies to assist in important preparations. A further advantage of a state central office is that the smaller companies can draw upon the ideas developed by the larger organizations and thus fit more accurately and advantageously into the picture.

A preparation of this kind will result in a unified and harmonious program and will keep weak links out of the chain.

A utility company planning to hold an Open House Week needs to prepare a unified internal program. District managers, department heads and superintendents need to have the objectives carefully explained to them and their enthusiasm developed for the effort. Without this, there will be something lacking when the public arrives. A great deal of routine and detail work is necessary, since the results sought can only be achieved cooperatively.

First of all, the plant must be put in condition to receive visitors. Unsightly and unnecessary material should be cleared or stacked. Thought should be given to the appearance of building interiors and illumination. This applies to shops as well as offices, for a light company with gloomy or dingy rooms is a contradiction that the public is quick to recognize.

Make the salesroom attractive, with up-to-date appliances. Demonstrations will arouse interest. However, as this is not a merchandising or sales effort, care should

POWER
Next Week
—IS—
Open House Week
AT OUR PLANTS AND OFFICES
Come see Gas and Electricity made.
Do you think of Gas and Electricity as your servants? That's just what they are—for every day, miles away, men labor that Electricity and Gas may help you cook your meals, light your house and do your work.
You should see how all this is done—you will enjoy it.
All next week—Monday to Saturday—is Open House Week at our plants and offices. You and your friends are invited to visit us—arrangements are made to escort you about and explain the many interesting things about the great industry
Come Any Afternoon from 2 P.M. to 5 P.M. or Tuesday or Thursday Evening.
INVITATION TO CLUBS, SOCIETIES and SCHOOLS. Noonday clubs, women's clubs and school classes are invited to attend in a body. We will gladly escort your party through at any time.
Just phone Mr. Tessman, Riverside 1600, and arrangements will be made.
Ride With Us Free
Busses leave our office, 134 S. Washington Ave., every afternoon at 2 p. m., Tuesday and Thursday evenings at 7:30 p. m.
"Come as Our Guests"
CONSUMERS POWER COMPANY

The Use of Illustration Is Invaluable. In a National Campaign Mats Could Be Prepared for Simultaneous Use Throughout the Country.

In Less Than 2 Years Some 200,000 Persons Have Visited Gas and Electric Plants During Open House Celebrations in the United States.

be taken to avoid anything savoring of a "campaign."

The business office should be relieved of such signs as, "Make Complaints Here," "General Manager, No Admittance," "Handle Goods at Your Own Risk," "Beware of Pickpockets," etc. Employes should be prepared to answer all questions or to take the inquirer direct to the person familiar with any special subject.

The aim at attractiveness also applies to shops. The shop is a very important unit in the rendering of service, notwithstanding the fact that it is frequently located in a basement or outbuilding. Here meters are tested, appliances repaired, distribution supplies stored to the amount of many thousand dollars, and sometimes a place for employes to spend their noon hour is provided. These work buildings should be a place to which visitors can be taken and in which the employes will feel pride.

In every instance the plant should be very thoroughly placarded, each piece of machinery or equipment or storage pile being labeled. Considerable thought should be given to the preparation of these signs, for they are wonderful time savers. A half dozen printed words of information will save a great deal of time in answering questions about the equipment, and will enable the guides to make the best possible progress. For instance, a coal pile might be labeled to inform the visitor where the fuel came from, how much reserve is always stored, how much coal is used each day of average operation, and what amount of gas, coke, tar and ammonia comes from one ton.

Since every enterprising utility manager is desirous of developing a strong employe spirit, some thought might well be given to the effect of Open House Week on the company organization.

It has been found desirable, just before the plant is opened to the public, to have a "dress rehearsal," at which the office staff is taken through the manufacturing and service departments and vice-versa. The guides tell their story to their fellow employes and answer questions. Afterwards, all hear an address by the

general manager, who tells them about the overhead organization, explaining matters of financing, regulation, the holding company and anything else of importance about the policy of the corporation. It will be a revelation to see how little each employe knows about matters going on about him in departments which are only a name or number.

Every utility employe these days hears an endless amount of discussion about service, yet it requires something more to bring a realization of how dependent the public really is upon the proper and enthusiastic discharge of his duties. What can stimulate pride in a utility man's job more emphatically than to see hundreds of his townspeople take time to visit him and ask about his work? This, several managers have reported, has been a very important benefit.

Employes also can be brought to study the Open House plan and advance valuable suggestions. Awards have been offered with good results for ideas that could be incorporated into the program. In short, Open House Week will focus everyone's attention upon the functions of the company, and some beneficial disclosures are inevitable.

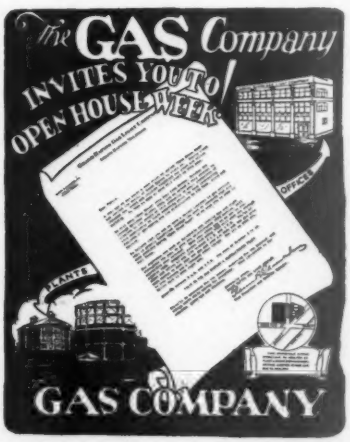
PUBLICITY AND ADVERTISING

From the standpoint of the press, Open House Week has another virtue because it MAKES news. There is scarcely any interest to editors in the uninterrupted supplying of cubic feet and kilowatt hours, and only when the establishment which renders the service builds additions or has an accident or comes before the local government for something does it receive notice.

The throwing open of the plant to the public immediately focuses attention and gives timeliness to everything connected with the utility. It offers the manager an opportunity to tell his townspeople what they are going to see and why it is possible to show it to them, owing to the background which exists of regulation and efficient and economical management as provided by the holding company. The fact that the entire program is preceded by a well planned campaign of display advertising does not in the least injure its appeal to the editorial departments of the local press.

In Michigan, aside from reporting the actual preparation of the plant for a public reception and recording the attendance, articles have been printed in practically every city where Open House Week has been held on the following subjects, prepared as advance publicity and released through local managers: History of the plant, the magical process of releasing precious by-products in the manufacture of gas, sources of electric power supply, how the gas and electric load reveals the habits and routine of the community, amount of water used in a steam plant for condensing and other purposes, how and why gas is "scrubbed", the gas and electric meter and why they are so accurate, the social values of gas and electric service.

There is another aspect of the publicity feature of an Open House Week which several managers have reported. It brings the utility manager and the newspaper publisher together in a civic enterprise of common interest to both. In some cities,



A General Invitation to Customers Precedes the Formal Opening of An Advertising Campaign for Open House Week.

managers have employed local reporters and advertising men to act as counsel with them in the preparation of material. Utility men have found it desirable to discuss the project with editors, and in many instances a basis of understanding was established which was very beneficial to both. It is just another one of the hidden values in the entire program.

WHEN TO START

It has been found desirable to begin advertising and publicity about one week before the plant is to be opened to visitors. First, announcements should be written to stimulate curiosity and interest. Later, schedules, transportation facilities and any special announcements, such as contests, should be explained.

The use of illustration is invaluable. If Open House Week is undertaken on a national basis, it will be found practical for publicity and advertising sections of the national associations to prepare mats which can be used in every part of the country. Local commercial artists can be found who will draw small maps, showing location of plant and office and available routes to reach them. All copy should conform to the established standards as to brevity and clearness and the emphasis of one idea at a time.

Publicity stories will be found most acceptable if prepared for release in the form of interviews with the local executive. These are written with blank spaces left for the name of the officer and his company, and for the insertion of figures dealing with the operation in each community. These should never be presented with advertising copy and handled through the business office. This would give them an undesirable connotation. They should be offered to the city editor of the paper as bona fide matter, dealing with an event of local importance. Wherever this practice has been followed, the results have been satisfactory.

This is the first of two articles by Mr. Fischer on the subject of a National Utility Week. The second will appear in an early issue.—Ed.

A Few Safety Records Worthy of Note

MANY long time safety records have been established by the Kansas Gas and Electric Company since the inauguration of organized safety work a few years ago. The company, with headquarters at Wichita, supplies 60 towns in central and southeastern Kansas with gas and electricity. Each district which goes a year without an accident is awarded a bronze tablet, and each department which establishes a similar record is awarded a parchment certificate. Whenever the bronze tablet is awarded, L. O. Ripley, vice-president and chief field executive of the company, presides.

Recently the entire Newton district of the company, comprising ten towns with a total population of 15,403, with 65½ miles of electric distribution line, and 28 miles of gas distribution line, completed a record of two years without an accident. Not only were no lost time accidents incurred, but not an employe in the district has found it necessary to visit the doctor because of accident. J. B. Nicholson, district manager of Newton, has been energetic in keeping his district interested in safety, and much of the credit for the remarkable record is due to him.

OTHER RECORDS

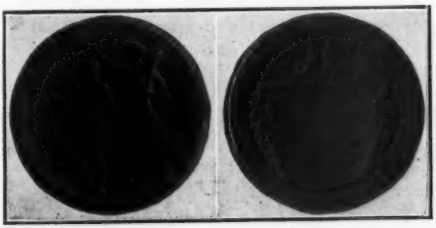
The company's store room at Wichita has also made a record of two years without an accident. The operating department of the Wichita plant has a record of 14 months; the mechanical department, one year; the repair department, one year; the plant department at Arkansas City, 21 months; the Fredonia Division, 14 months; Elk River division, 21 months; Hutchinson district, 21 months; Cherryvale Plant, 21 months; and Independence plant, 21 months.

To keep safety constantly before every department, a flag-stand, designed to hold a small American flag, is placed on the desk of the head of each department in the organization. When the flag is in the stand, it indicates that there has been no accident in the department for a period of 30 days. The company magazine aids in the work by publishing the monthly records.

From National Safety News.

Medals for Employes Memorialize Good Service

THREE medals, of gold, silver and bronze, it has been announced, will be presented yearly by the Consolidated Gas Company of New York and its affiliated companies, including the New York Edison and the United Electric Light and Power Companies, to em-



Showing the Obverse, left, and Reverse, right, Sides of the Medal Offered for Meritorious Service.

ployes for noteworthy acts and meritorious service. The plan became effective on New Year's Day.

In making the announcement, George B. Cortelyou, president of the company, said that the matter had been under consideration for some time and it was unquestioned that such a service for well-earned distinction would bring added value and an enhanced spirit within the affiliated companies and draw into closer community of feeling the organizations themselves and the public for whom they strive to give the best service.

Every employe of the companies, regardless of his or her grade of work or assignment, will be eligible. The Meritorious Service Award will be made annually by a committee composed of a representative of each of the affiliated companies, and President Cortelyou as the chairman.

All of the medals are identical in design, the work of Julie Kilenyi, who designed the Coolidge Inaugural Medal, the Pershing Medal and the Thomas A. Edison Memorial medallion, and each will have engraved upon it the name of the recipient and a citation of the act or service that caused the reward.

FOUR CITIES AID GAS COURSE

GAS COMPANIES of four cities, Baltimore, Rochester, New York and Oil City, have united in creating a fund for the furtherance of applied research in gas engineering this year at Johns Hopkins University. The subscriptions, it was stated at the university, will be placed for disposal in the hands of Dr. Wilbert J. Huff, who was appointed professor of gas engineering at Johns Hopkins last September.

The fund provides for the salaries and equipment for three research workers, who will devote their full time, under the direction of Dr. Huff, to experiments in the laboratories of the School of Engineering.

They will investigate processes of gas manufacture, the utilization of plant facilities and the production of by-products, Dr. Huff said.

The course in gas engineering at Johns Hopkins is the result of a movement inaugurated last year by the Southern Gas Association for the establishment of this branch of science in the curriculum of the university. A guarantee fund of $8,000 a year was raised to support the course for at least five years.

EMPLOYEES BUY BONDS

THE BROOKLYN UNION GAS COMPANY has offered its employes the privilege of subscribing at par to $550,000 of $11,800,000 ten-year 5½ per cent convertible debenture. These bonds are due January 1, 1936, being convertible on and after January 1, 1929, into two shares of stock for each $100 of debentures surrendered. The stockholders have surrendered their rights in voting to set aside $550,000 of these bonds for employe subscription, with the expectation that the employes will become permanent stockholders in the company.

JAMES H. JOURDAN, president of the company has announced that more than 3100 employees took advantage of this offer and subscribed to the bonds. The subscriptions came from every department of the company in large amounts. The total subscription was over $1,000,000. The employees were given the privilege of paying in one payment or on the partial payment plan.

In Memoriam

James Morgan, Standard Gas Light Company, New York
Herbert C. Morley, Consumers' Gas Company, Toronto, Canada
Peter J. Riley, Consolidated Gas Company, New York
Richard Whitten, Laclede Gas Light Company, St. Louis, Mo.

The Versatility of Gas Heating

Practical "Stunts" in Vancouver Also Proclaim Its Universality

By J. FREMONT, British Columbia Electric Railway Company, Vancouver, B. C.

A CHURCH committee called upon the new business department one morning and told us they were erecting a tent measuring 136′ long by 80′ wide and 30′ high, with a seating capacity of 1500, which they wanted to heat. We were given to understand that several local heating engineers were approached and asked to give an estimate on heating the tent with coal-fired equipment, but had turned down the proposition as an unpractical one. Could *we* do anything for them?

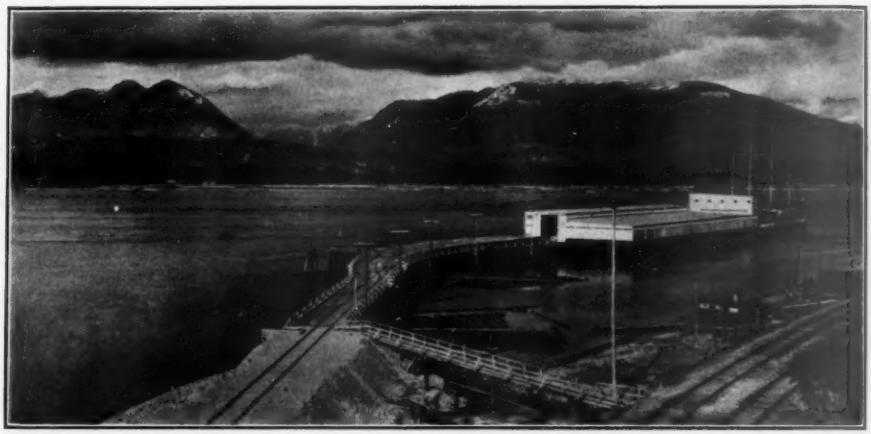
The possibilities were figured out by our heating engineer, Mr. Carver, and having carefully checked the amount of radiation necessary, taking into consideration the quality of the material used in making the tent, it was decided that the project was not only possible, but quite practicable; an estimate was very soon prepared and presented to the committee. This was accepted the following day and the work proceeded forthwith.

The idea of this tent was purely a temporary measure, the board of management expecting to get sufficient funds at some future date for a proper church building. With this in mind it was decided that the most practical and economical gas heating plant would be the "Improved" Vacuum system, which could be easily transferred to a permanent building without undue expense.

The size of the radiation installed was 16-section, 2-column, 32″ high radiators, and twenty of these were used in all. The motor fan operating the Vacuum system was one-half horse power. In constructing the Vacuum line, a special pipe manufactured in Great Britian, known as Urastone Pipe, was used. This pipe is a composition of asbestos, fireclay, silica, etc., and is used exclusively by us on the Vacuum system owing to its proof against condensation and rust.

This heating plant has now been installed nine months, the following figures being

Gas Heated Pyramid Temple Tent at Vancouver, B. C. Signs Like That in the Oval Are Placed on All Buildings in Which Gas Is Being Installed for This Purpose.



Offices and Warehouse of the Terminal Dock & Warehouse Company, a Long Haul Gas Heating Job

the operating expenses on our special heating rate, i.e., 75 cents per 1000 cu.ft. on the first 10,000 cu.ft., balance of consumption at 60 cents per 1000 cu.ft.

1925		
Mar.	132,900 cu.ft.	$81.24
Apr.	55,400 cu.ft.	34.74
May	21,000 cu.ft.	14.10
Sept.	35,800 cu.ft.	22.98
Oct.	100,500 cu.ft.	61.80
Nov.	126,500 cu.ft.	77.40

The plant has been an unqualified success, and it might be interesting to state that the pastor of the church, from the pulpit on the first Sunday after the work had been completed, asked all in the congregation who were warm and comfortable to kindly stand up—and the whole congregation rose in a body!

As a sum sufficient for the new building has almost been subscribed for, we are looking forward to moving the heating equipment from the tent to their permanent home in the very near future.

LONG DISTANCE HEATING

Another unusual gas heating installation made in Vancouver is that of the Terminal Dock and Warehouse Company, and just how difficult it was can be gauged by a glance at the illustration.

When the question of heating their offices came up with the builders of this dock, the possibilities of installing a gas heating system were investigated, and so enthusiastic was the management over the idea of gas as a fuel that they decided to use this type of heating, provided the gas company could extend their main to the pier.

Our gas main ended at the top of an embankment, sixty feet above a double-tracked railway crossing that had to be tunneled before we could gain entrance to the pier. A 4″ main was carried down this embankment to a point at the commencement of the piling, with a 2″ service continued at that point 500 feet to the entrance of the offices at the extreme end of the pier.

In laying this 2″ line along the piling, considerable difficulty was experienced by the pipe layers, who most of the time had to work from a raft. Fortunately, the installation was made during the summer months, as one of the workmen, in taking a false step, had an unexpected bath. In order to pass under the railway tracks, it was necessary to sink an 8″ pipe five feet to carry the 4″ main. This larger pipe was also used to house the water pipe from the city main.

The Vacuum system was again used for

this building. Only the offices required heating, the very large warehouse adjoining being used for storage purposes only. The plant consisted of a large public office, general manager's office, a captain's room (which is used by the captain of any boat docking at the pier), a luncheon room for the employes, a drying room for sacks, and two wash rooms. The ladies' rest room was augumented by a gas fire with an open fireplace effect to add to the cheerfulness of the room.

As the dock is quite a distance from the nearest restaurant, it was necessary to install an up-to-date all-gas kitchen to provide lunches for the employes.

We are unable to quote comparative gas consumptions, as the installation has yet to pass through the coldest months of the winter season; the owners of the dock express themselves in every way satisfied, both with the efficiency of the plant and the operating costs to date.

Change Brings Problem to Erstwhile Natural Company

By GUY E. CHESNUT
St. Joseph Gas Company, St. Joseph, Mo.

AFTER a period of about twelve years distributing natural gas, the last two most unsatisfactory to the consumer on account of the uncertainty of the supply, The St. Joseph (Mo.) Gas Company began making and selling gas following the exhaustion of the natural gas supply. Owing to the much higher rates and other disrupting conditions incidental to a change of this kind, the gas company soon found itself generally in bad standing with its customers. Realizing the necessity for good will and the confidence of its patrons, the company set about "putting its house in order."

The first step made was to start a feeling of good will and kindly intent of one employe to another, and to instill in the minds of the employes the desire of the company to be fair with them and to the people who dealt with it. This was done through the mediums of an employes' club, competitive bowling teams, truthful propaganda put out by those who honestly believed in the company, and a decided change in the methods of the company's dealings with its patrons.

Boosted at every chance by the members of the gas company's organization, and coupled with courteous service, good gas at all times and efficient appliances to sell, this company has been enabled to stop the loss of gas consumers which had been occuring regularly each year, and they have for some time past been gaining consumers each month, and complaints are comparatively rare. The gas rates have not been changed for the past four years. This company has taken the stand that good will means that a customer has been so fairly treated and well taken care of that he will be glad to go back to its office or sales floor for information, service or appliances.

To further its policy of putting its house in order, not only has modern gas making equipment been installed at the gas works, but unsightly buildings have been torn down and the works beautified with paint and well-kept grounds. The office building and sales floor were remodelled and rearranged for convenience and attractiveness. The beautifying of works, office and salesroom showed the public that the company's civic pride was actively engaged in keeping the company abreast of private and municipal improvements which materially assisted in creating a feeling of good will.

A COMMENDABLE RESOLUTION

ON January 11 Alexander Forward, secretary-manager of the American Gas Association, addressed the fourth annual conference of Presidents and Secretaries of Master Plumbers' Associations and Heating and Piping Contractors at Evansville, Ind.

In his speech, Mr. Forward told of the work the Testing Laboratory is doing. He urged strongly the suggestion that the master plumbers and heating contractors appoint a committee to formulate what in their opinion would be an acceptable basis for cooperation with the gas industry. A resolution to this effect was made and unanimously adopted.

An Accident That Paid a Profit

How Efficient Service in an Emergency Wrung Tribute Even from the Opposition

By H. M. HITCHCOCK, Columbia Gas & Electric Company

THE Cincinnati municipal election, held November 3rd last, was a rather important one for the Union Gas & Electric Company, the local subsidiary of the Columbia System, and consequently for the entire Columbia organization.

The company's methods and rates had come in for severe criticism from some of the candidates and had, in fact, been made to some extent an issue of the election. One feature of the criticism to which the Union Gas & Electric Company has long been exposed in Cincinnati has been its relationship to the Columbia System and the part played by the Columbia Gas & Electric Company in Cincinnati's gas and electric problems.

Consequently, when a bad break occurred in the principle twenty-inch main pipe line, bringing natural gas from the Columbia fields in West Virginia to Cincinnati, on the Sunday evening before election day, it looked like one of those cases of the cussedness of inanimate things against which public utility men strive in vain.

By heroic effort on the part of the whole Columbia organization the break was repaired and the emergency surmounted, but not without some inconvenience to our Cincinnati customers during Monday morning, and some apprehension was felt as to the effect upon public sentiment already disposed to be critical.

At this juncture the happy thought occurred to President W. W. Freeman, of the Union Gas & Electric Company, to capitalize the accident and publicly declare our pride in the courage and resourcefulness of the Columbia System men who had succeeded in meeting so

(Continued on page 92)

A Statement To Our Gas Consumers:

About 7 o'clock Sunday evening one of the most unusual accidents, of a character impossible to foresee, that has ever tested the efficiency of Cincinnati's gas supply system, put out of commission the 20-inch pipeline which forms the main source of natural gas supply to Cincinnati from the West Virginia fields.

High water beyond record in a mountain stream—Greenbrier Creek, between Hunnewell and Rugglest, W. Va.—proved too much for the section of pipeline in its bed, and this gave way. The line crosses Greenbrier Creek at a point 90 mils from Cincinnati, and in an extremely inaccessible spot.

Coming as it did, the break constituted as searching an emergency test of the new facilities provided within the past year for safeguarding Cincinnati's gas supply, as could possibly have been conceived.

All the resources of the Union Gas & Electric company and of the entire Columbia System were immediately mobilized to cope with the emergency. The break was promptly located, and a large force of men, with all necessary equipment, including an ample supply of new pipe, was dispatched at once by truck, in pitch darkness, over eight miles of dangerous mountain roads to the scene of the trouble.

Meanwhile, here in Cincinnati, our workers turned to at the new East End gas works, which had been held in reserve heretofore for cold-weather conditions, and in an extremely short time had begun to deliver manufactured gas, of the highest possible quality, into the distribution system, to replace as far as possible the interrupted natural gas service.

The additions recently made to the local distribution system, costing millions of dollars, were of the greatest service in enabling us to make fullest possible use of the natural gas brought in over the Ohio pipe lines.

Practically the entire personnel of the Gas Department of The Union Gas & Electric Company, including the executive officers of the company, was on duty all night long, doing everything possible to meet the emergency with the least possible inconvenience to our customers.

The real heroes of this occasion, however, are the repair men of the Columbia System, who toiled all night long by the light of flares, often up to the neck in the raging waters of Greenbrier Creek, risking life and limb in order to report, at 7 o'clock Monday morning, that the line was again ready for service.

Greenbrier Creek was beaten, but service over a portion of Cincinnati suffered to some extent during the early morning hours. However, at no time was there a complete failure of gas pressure, and in some sections of the city the normal service was not even affected at all.

Had such an accident occurred before the construction of the new East End plant, it would have been absolutely impossible to maintain gas service of any character in Cincinnati over a period of at least 18 hours.

Service is now restored to normal, and there is no reason to anticipate that it will not continue in that condition.

We believe that the public will appreciate the manner in which our organization met an emergency which, for the time being, deprived Cincinnati of a major portion of its normal natural gas supply We wish to express our regret for the unavoidable inconvenience caused some of our customers, and to thank them for the considderate manner in which they have accepted the situation.

We wish more especially, however, to take advantage of this opportunity to record our pride in the spirit, loyalty, courage and skill of our fellow-workers of the Columbia System, who met and conquered an emergency without precedent, and proved their right to your confidence, as they have done before, and stand ready to do again.

THE UNION GAS & ELECTRIC COMPANY,
W. W. Freeman, President.

The Meter Reader As a Salesman

Eight Months' Trial More Than Justifies New Plan of Merchandising, and 50% Increase in Sales Is Looked for in 1926

By R. R. FREY, Central Iowa Power and Light Company

EVERY public utility, whether it be gas or electric or both, has the same problem in its new business department. We are all groping around for a way to increase our connected load and gas output through the sale of gas and electrical appliances to our customers. Our business has developed so rapidly within the last few years that, even by working night and day, we have hardly been able to keep up with its rapid growth.

Many of our executives are just beginning to realize the value of merchandising appliances. These men are engineers, and as such they do not understand merchandising and its many problems. Many of them are not willing to delegate sufficient authority to the men in charge of this department that will allow them to build up a substantial volume of sales of these appliances.

We must build a sales organization capable of developing a large sales volume for us in such a manner that it will be building good-will and improving our public relations, as well as giving us a sales volume and increased revenue through the sale of appliances. We must strive for all-the-year selling of all appliances as far as possible instead of spasmodic efforts at different seasons. We must level off the peaks and valleys so that there will be a more uniform volume of sales each month.

We have shown that this can be done by special efforts during the so-called low points of February and July. We must make it possible for our salesmen to make substantial earnings during each month of the year; only by so doing can we retain good men in our sales organization. We must pay commissions large enough so that we can attract a higher class of

Type of Meter-Reader-Salesmen Fully Equipped for the First Day's Record Sales.

man than we have been getting. Their earnings must be at least as high as those in similar organizations. The cost to train new men is very high, and we must lessen the turnover. We must be able to attract men from other lines of business, and it is only by paying money for their services that we can secure these men and hold them.

It was with these thoughts in mind that Ralph H. Garrison, the division manager of this property, and the writer developed the Meter Reader-Salesman plan of selling. It is not a new idea, but we believe that we have developed it more fully than any others. It is only with the able assistance and co-operation of Mr. Garrison that we have been able to carry out the plan and make it so successful.

The plan has been in operation since

Fig. 1, Front

WHY YOU SHOULD PATRONIZE YOUR "SERVICE COMPANY"
Our Service Men will make regular monthly inspections of all Gas and Electric Appliances sold by this Company. They will make any minor repairs or adjustments necessary and charge only for the materials used.
We maintain a regular repair service for all other appliances and you will be charged only for labor and material on this work.
All appliances sold by this Company are guaranteed to render good service and if for any reason you are not entirely satisfied we want to know it.
CENTRAL IOWA POWER & LIGHT CO.
WATERLOO 5620
CEDAR FALLS 145
SEE OTHER SIDE

Fig. 2, Back

After Adjustment or Inspection Each Appliance Is Tagged With the Proper Notation of Its Condition

the first of June, 1925, and every month since that time has shown a substantial increase over the same months of any previous years. There have been quite a few handicaps of various kinds, but in spite of them the plan has been showing a steady improvement in every way.

The greatest handicap of all has been that we have not had continuous reading of meters. This was caused by a delay in receiving one of the new automatic billing machines. This is now in operation, and this difficulty will soon be overcome.

A little explanation of the old system of reading meters is necessary. This city is divided about equally by the river running through it. Before this plan was put into effect, and when there were four meter readers, these four men would spend the first half of the month reading on the east side, and would then go over to the west side.

When this plan was put in operation, we placed four Meter-Reader-Salesmen on the east side, and three on the west. This gave each group of men about one-half of each month when they were not reading or passing bills. It actually gave them only about one week for selling. These men read both the gas and electric meters, pick up their own skips, and pass the bills. We are gradually extending the reading periods by starting one or two days earlier each month, so that before many months they will be reading a little each day. In this way we will not disturb the billing, and the difference in the bills is very small.

The general plan of operation is this: We formerly had four men reading the residential meters over the entire city. We also had three salesmen who were selling appliances with no organized plan except that they had specified territories. We took these seven men and made Meter-Reader-Salesmen of them. Each man was given a certain territory of about 1500 homes.

We endeavored to lay out each territory so that every man would have about an equal number of homes of each class. These territories followed the regular meter routes. In the 1500 homes each man would have about 2650 meters. They are responsible for everything in their territories, the reading of all meters, the picking-up of skips, and the passing of bills—not the bills for merchandise, however, as these are mailed. After the first of the year, they will not pass the bills, as we will use some others for this, and the Meter-Reader-Salesmen will have more time for constructive work and the promotion of sales.

All of these men realize that the continuous reading will be better for them in every way, as, while doing this work, they have entrée to every home in the city, whereas on straight solicitation they have the same difficulty in getting into the homes as do the salesmen of other organizations. When we get into the continuous reading, each of them will have about 70 homes per day in which to read the meters, and this will be for about 21 days in the month, with about one day each week for special demonstrations and other work. This will give sufficient time for service and other work.

We pay each man $125 per month. Of this amount one half, or $62.50, is charged to meter reading, and one-half to merchandise sales as a drawing account. These men are credited with 15% commission on the sale of all major appliances which they close personally. With the drawing account of $62.50 and the 15% commission, this establishes a quota for them of $416 which they must first sell before earning any additional commissions.

On all sales of major appliances which are sold in one of the two stores by the stores sales force, these men are credited with only 12½%. They are entitled to full credit on the sale of all small appliances that they sell personally. The clerks in the stores are paid $75 per month salary, and 2½% on all of their sales. We paid only 1% to them until recently, and we decided to increase this because of their splendid efforts and to give a little greater incentive to their work. Store sales are increasing steadily in all lines, so, as this volume increases, our general sales expense will decrease.

The work of the Meter-Reader-Salesmen is bringing more people into the store each month. Most of the prospects for stoves must come to one of the offices to make a selection, and these people are buying more lamps, irons, toasters, and the many other small appliances.

SELLING SERVICE

One idea, more than any other that we have been driving into these men, is that they are selling service, that they are not selling just washing machines, stoves, tank-heaters, etc., but clean clothes, better cooked food, the many advantages of hot water; that what we are selling is not just gas or electrical energy, but the use of those appliances which are made available for our patrons' use by the application of these two very necessary things; that the customer is not getting the full value of his gas or electric service unless he is possessed of those appliances or devices which lighten house-work, beautify his home, and make it a more comfortable and pleasant place in which to live; and that his wife or mother cannot have the time to spend in beautifying the home and making it more comfortable, or to give to her appearance, if she is tied down by drudgery and hard labor that is so easily and cheaply performed by the many modern gas and electrical devices.

Combined Route Sheet

Gas Meter Data			Electric Meter Data		
Size	Meter No.	Location	Size	Meter No.	Location

1925	Gas	Electric	1926	Gas	Electric
Fwd			Fwd		
Jan.			Jan.		
Feb.			Feb.		
March			March		
April			April		
May			May		
June			June		
July			July		
Aug.			Aug.		
Sept.			Sept.		
Oct.			Oct.		
Nov.			Nov.		
Dec.			Dec.		

Fig. 3

SERVICE RECORD

APPLIANCE	KIND OR SIZE	CONDITION	REMARKS
CLOTHES WASHER			
VACUUM CLEANER			
IRONER			
REFRIGERATOR			
RANGE			
DISH WASHER			
IRONS			
TOASTER			
PERCOLATOR			
HOT PLATES			
COOLERS			
WAFFLE IRON			
WARMING PAD			
WAGE HEATER			
CURLERS			
FANS			
GAS			
RANGE, CABINET			
RANGE, SQUARE			
HOT PLATE			
TANK HEATER			
AUTO HEATER			
SPACE HEATER			
BROILER			
FURNACE			
KIND OF FUEL			
WATER TANK			
FIREPLACE			

Fig. 4

Each Appliance Sale Is Noted on the Back of the Meter Reading Sheet, Which Greatly Simplifies the Keeping of a Prospect Follow-Up System. It Also Acts as a Record of the Connected Load.

These men are selling service. By that we do not mean service as the word is often abused. Each man is provided with a leather bag as shown in the photograph. These bags are 12 inches wide, 10 inches high and 4 inches deep. In the bag is one pocket where he carries a standard loose-leaf catalog with a leather cover. In the catalog are shown complete catalogs of all lines that we carry, and in the front of it are complete price lists of all these lines.

All prices are shown—the deferred payment price, the cash payment, the monthly payments and the cash price. We consider 30 days as cash. As practically all of the business is done on deferred payments, those are the prices that are always quoted, with the additional statement that the customer will be allowed a discount if the amount is paid within 30 days. We add the regular 10% carrying charge to the cash prices. A customer can discount the unpaid balance at any time. We use the standard form of lien contract as is used nearly all over the country. We use the same form for both charge and cash transactions, as this simplifies matters greatly.

During the reading periods, the men carry their copies of The Central Iowa News, which is a paper that we issue once a month. The front half of the bag is divided into two compartments. In one of these they carry circulars of the different lines and the inspection tags. In the other pocket they have a smal kit of tools, an oil can, a few attachments and heater plugs and an assortment of fuses.

As soon as the man has read the meters, he makes an inspection of the washing machine, the tank-heater, if there is one, the gas stove, or any other major appliances. With his tools he makes any adjustments that are necessary. He tags each appliance as he does so, and makes a notation on the tag as to whether the appliance is in a satisfactory condition. If he thinks that it requires some special service he puts his recommendation on the tag. These tags state that this is part of our regular monthly inspection service on this appliance which they purchase from us, but the men use them also in reporting to the customer when they think that some appliance is not operating satisfactorily.

By this regular monthly inspection we are reducing service calls to a minimum. By oiling motors, fixing attachment plugs and heater plugs, we are eliminating a lot of trouble that is responsible for so many calls for our service trucks. Best of all, though, we are building good-will, improving public relations, selling the company to our consumers, and building up increased merchandise sales, which, more than anything else, will build up our connected load and increase our gas output. The more appliances that we sell the more we will build good-will and improve our relations with our customers.

By rendering these little services on their own time, the men are building up a clientele of satisfied customers. They are obligating these people and are selling their services so strongly that, when they are in the market for anything that we sell, they are going to remember these men and favor them with the business. We see this every day in the stores when the customers request that certain men be given credit for the sale. They tell the men of others who are interested, and many times actually help to close a sale.

These men have brought back to the use of gas people who purchased oil stoves during the last few years. They have sold electric service to others who have not been on our lines, and in every case have sold a washer or gas stove or some other such appliance. For each new service we pay them $1.

On the back of each meter reading slip is a list of nearly all gas and electrical appliances. As a sale is made to that customer, it is noted on the back of the slip.

Each man is making a record of the connected load in this way. It gives him a full record of each customer so that, before he enters the home, he has a follow-up on any prospects and a record of services rendered previously. This record

simplifies the keeping of a prospect follow-up system.

As a check on these men, we use a meter reading card as shown in the illustration. These tags are attached to each gas and electric meter and the men are required to mark them at each reading. When there is any doubt about the readings, the customer or an inspector can very soon check up on it.

We have a permanent policy of allowing a customer free trial in his own home of any appliance that we sell except electrical refrigeration, and the day is not far distant when we believe that this will be possible also. We will send out and install anything that we sell on this basis.

The returns from this liberal policy have been almost nothing. In the last six months we have had but one stove that was returned in this way, and in this case it was a woman who wanted to impress some out-of-town relatives, and who had no intention of buying. If we can just get the appliances into the homes, we have no trouble in making the sales. This, more than anything else, has made it possible to sell about 85% of all stoves with the oven control. It made possible the sale of quite a number of Time-O-Stats.

Central Iowa Power & Light Co.
METER READINGS

DATE	READING	DATE	READING
1926 JAN.		1927 JAN.	
FEB.		FEB.	
MAR.		MAR.	
APR.		APR.	
MAY		MAY	
JUNE		JUNE	
JULY		JULY	
AUG.		AUG.	
SEPT.		SEPT.	
OCT.		OCT.	
NOV.		NOV.	
DEC.		DEC.	

Form 21-T-P-10M-9-25

Fig. 5.
This Tag Card Is Used as a Check on the Meter Reader and Must Be Marked at Each Reading.

TRAINING OF SALESMEN

As stated before, four of these men were formerly meter readers and three of them salesmen. We have made only one change, and this was to replace one of the salesmen. We had no difficulty in selling the idea in the beginning to all of the men. It appealed to the meter readers because of the possibility for increased earnings. It appealed to the salesmen because, under the old method, it was almost impossible for them to get into the homes to talk to the women. They were handicapped, as are all resale and house-to-house men.

We have weekly sales meetings at which we go into all angles of their work. We discuss the problems of the past week and try to show them their mistakes. We have prepared a sales manual that we refer to and discuss. They compare experiences in a friendly way and, if any of them have developed a new method or plan, the others can have the benefit of it.

We have a standard prospect form that is used by those on the sales floor. On this they make a complete report of the conversation with the prospect. These are handed to the writer, and he distributes them on the same day to the men in whose territories they are located.

The men have adopted almost a standard uniform of their own accord. They wear leather coats, riding breeches, high boots or tan shoes with leather leggings, and a cap. In this way they can maintain a neat appearance at all times. In wet weather they wear rubbers which they can slip off before entering the house.

One of the troubles in handling salesmen is to have a check on their movements to know that they are really work-

ing. By this plan we can locate any of them at almost any time of the day.

The meters are divided into books, which represent the number they must read in one day. They understand and realize that the meter reading comes before everything else, and that for the privilege of earning the extra money that is possible through the sale of appliances they must first read the meters. The men are so sold on the plan that they are working several nights each week, a few of them every night. All of them are on duty in the stores on Saturday nights and also on discount nights.

The men who were the ordinary type of meter readers a few months ago are giving more thought to their appearance. To see these men in the stores, you would compare them very favorably with men in any other business. They are on their toes morning, noon and night, and they realize that they have an opportunity to make more money than any other young men in the city, in any other line of work.

They realize that, because of the earnings made possible by this plan, we can attract the very highest class of men, and that their future with this company depends entirely upon the results that they show. They realize that they will have to fight to hold their jobs, that their earnings are not limited in any way, and that they can make enough money to own their own homes and to have their own automobiles. Their wives realize that they have a wonderful opportunity to succeed and are behind them 100%.

WHAT THE PLAN IS DOING

The Meter-Reader-Salesman plan is doing many things and solving many problems for us as a public utility. It is selling the company 100% to all of our consumers. It is building more good-will each month for the company by the monthly inspection service, by the minor repairs that the men are making on appliances, and in the sale of labor saving appliances to the wives of our customers.

It is improving our public relations. These men are explaining things that people did not know before, or things that were misrepresented to them by politicians and others. By making the small repairs, they are keeping appliances on our lines that would often not be in service. They are selling the people more and more on the gas and electrical idea, and in the use of those appliances which use this energy. They are selling more appliances as time goes on, and I feel certain that this year we will show a 50% increase in the sale of merchandise over last year.

ADVERTISING

When this plan was first put into effect, a certain advertising allowance was authorized, which was based on the anticipated merchandise sales for the year. We felt that it would be necessary to spend more for advertising the first year, as very little had ever been done before. Of this amount 70% was allotted to newspaper advertising, 20% for display windows, and 10% for circular mailing, etc.

Since that time we have changed our advertising plan somewhat. We have discontinued the mailing of all circulars, as they are delivered personally by the men. We have two newspapers of about the same standing, so the allowance is divided equally among them. At an advertising rate of 52 cents per inch, this would allow us but three ads each week in each of the papers of three columns by six inches.

There are several large advertisers who use full page spreads all through the week, and the last two days of the week the papers are filled with market ads of the grocers, etc. These small ads of ours were buried among the others. We were also limited by the size of the ads to the sale of one appliance. With this problem confronting us, we decided to publish our own newspaper once a month. (See Mr. Frey's article in the A. G. A. MONTHLY, January, 1926-Ed.) This we have done for the last four months, and we feel that the results are very satisfactory. All of the men believe that this medium is worth much more to us than the

(Continued on page 121)

Plant and Holders of the Connecticut Power Company, New London, Conn.

The Area Rate Applied to Gas Service

Experience of Less Than Two Years Already Shows Marked Decrease in Number of Customers Served at a Loss

By V. E. BIRD, The Connecticut Power Company

SINCE the very early days of the gas industry, it has been the custom to charge a flat rate per thousand cubic feet of gas consumed for almost any purpose, using a sliding scale for very large consumptions. Even under these conditions, however, the lower steps on this sliding scale were so designed as never to go below the average cost of producing one thousand cubic feet of gas.

It is this abominable and time worn custom of figuring rates on the basis of the vicious average, instead of on the basis of increment costs, which has made the manufactured gas industry a follower instead of a leader as compared with the much younger electric industry.

Many are the gas companies whose yearly output has remained at approximately the same figure for years in succession, with but a slight variation such as 2 or 3%, sometimes up and sometimes down, as compared with electric companies in the same communities, measuring their growth by 25 to 40% yearly. To no small extent has this been due to the fact that electric rates have been scientifically designed and applied to the greatly varied classes of consumers, so as to take into consideration in each case maximum demand, load factor, diversity factor, etc., etc.

Considering that the same general underlying principles for rate making apply to both industries equally, it is only natural to expect as an inevitable result exactly what has occurred, namely, that the gas industry has lagged behind, whereas the electric industry has forged ahead.

Of late years considerable time and attention has been given to the study and development of scientific gas rates, par-

ticularly for industrial use and house heating, and with a gratifying measure of success. For domestic customers, the so-called service charge rate was developed, which in a large number of states has been very unpopular. To avoid the odium of a "service charge", the same principle was embodied in a sliding scale form of rate, with the first few hundred feet carrying a heavy charge per hundred cubic feet. This type of rate has been much more popular and successful, and surely is a step ahead in the right direction.

In New London, Connecticut, still another form of rate has been inaugurated for domestic consumption, which it is believed is an entirely new departure, for which reason it has been felt that it might be at least of passing interest to the industry as a whole. The rate was made effective on June 1, 1924, and reads as follows:

1. Flat Rate, 10 cts. per 100 sq.ft. of floor area per month, plus.
2. Energy Rate, $1.00 per 1000 cu.ft. per month.

METHOD OF MEASUREMENT

The floor area is determined by taking the outside dimensions of the building or apartment, multiplied by the number of floors, less an allowance for walls, etc., of 4% per 1000 sq.ft., of over-all area up to 10,000 sq.ft., with a minimum allowance of 10%.

Bay windows, unfinished attics, cellars and porches, as well as incidental barns, garages, and other outlying buildings not fitted for living quarters, are not included in computing area.

Minimum Charge—Flat Rate.
Minimum Area—1000 sq. ft.

In other words, here is a two-part demand rate, with an effort to collect from each consumer his share of the company's fixed and per customer charge. The principle is aged, only the application new, in that the demand charge is based on floor area.

It is recognized that the first question in the reader's mind will no doubt be, "What has the area of a house to do with the gas consumption for that house?" In answer to this perfectly natural and proper question, it need merely be said that the same question may, in a larger or smaller measure, be applied to any fixed or capacity charge except to an actual measured demand charge, which, in the case of domestic gas consumption, would be out of the question as being not only too cumbersome, but far too expensive.

This same type of two-part rate has for a number of years been applied with great success to domestic electric lighting in many electric companies, and originated in Ontario, Canada. It has been used by The Connecticut Power Company since February, 1923. It was due to the eminently satisfactory results obtained from the electric rates that the same principle was applied to our gas rates.

Careful research in this field has revealed that electric current consumption for lighting increases on the average fairly closely with the size of a house, and likewise that domestic gas consumption on the average increases in the same manner. Moreover, as the load factor for domestic cooking and hot water heating installations varies but little from 4.5% for the average installation, it follows that the demand will necessarily closely follow the same principle.

In adopting this form of rate, it is, therefore, not contended that it is more than an approximation of a scientifically correct demand rate; but, on the other hand, it is found to be as close an approximation to the desired result as could be arrived at with anything except an actual measured demand rate.

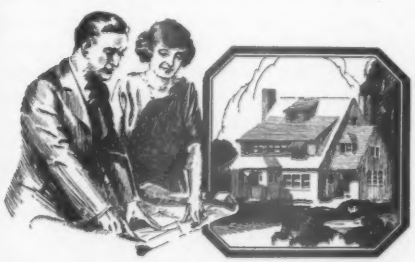
Again, it is fully recognized that any makeshift rate will bring about discriminatory results in a more or less aggravated degree, and so it is true that cases are found with this rate, where, by virtue of peculiar circumstances, a large house is occupied by a small family, which would be penalized under this form of rate. On the other hand, it is more generally found

that, where a large house is occupied by a relatively small family, the number of servants employed, as well as the amount of sociability indulged in by the family, will require range and water heater installations, with attendant gas consumption, proportionately greater as the size or floor area of the house increases.

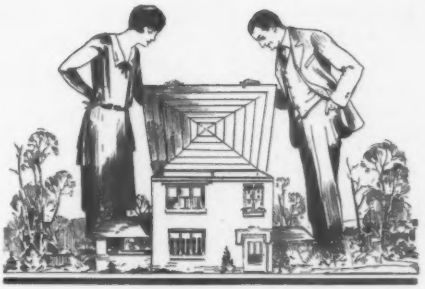
After all is said and done, the proof of the efficacy of any rate can only be determined by its effect upon the public, and its practical results for the consumer, as well as the company's earning capacity. When the rate was introduced in New London, all customers were billed in accordance therewith, but were at the same time given the option to revert to the old form of rate if this step were found to be more advantageous. The old form of rate was:

First 10,000 cu.ft. consumed per month, $1.40 per 1,000 cu.ft.
Next 10,000 cu.ft. consumed per month, $1.20 per 1,000 cu.ft.
Next 10,000 cu.ft. consumed per month, $1.05 per 1,000 cu.ft.
All above 30,000 cu.ft. consumed per month, 93 cents per 1,000 cu.ft.
Minimum Charge—$6.00 net per year per meter payable monthly and adjusted yearly.

In August, 1924, a survey of our domestic customers was taken, with the result that 55% were found to have retained the new area rate, whereas 45% had reverted to the old form of rate. Needless to say this option was offered as a matter of policy to eliminate the possibility of adverse criticism. We were entirely successful in our endeavor, and



The Area of a House Is Found to Have a Definite Relation, With Few Exceptions, to the Gas Consumption for That House.



For Rate Making the Floor Area Is Determined by Taking the Outside Dimensions of the Building Multiplied by the Number of Floors, Plus an Allowance for Walls, etc.

have received no complaints out of the ordinary.

On January 1, 1925, the old form of rate was closed for all new business, so that all new contracts have since been taken on the area rate, and a re-survey of our domestic customers made in August 1925 gave 58% as being on the area rate and 42% on the old form of rate.

As to the effect of this area rate on our customers: With an average floor area per customer of 1220 sq.ft., all customers using less than 3,000 cu.ft. per month have had their bills increased, whereas all customers using in excess of 3,000 cu.ft. per month have benefited by a rate reduction, varying in amount directly proportional to their respective load factors.

The effect of this rate as far as the company is concerned has been as follows:

The average rate earned per thousand cu.ft. of gas sold to all domestic customers on both rates in 1924 was $1.40, whereas in 1925 the average earned rate was $1.42 per M. cu.ft. Again, in 1923, before the area rate became effective,

24.1% of our domestic customers were served at an actual loss, whereas for the year ending with August, 1925, only 15.2% of our customers were so served. This we feel is certainly a step forward in the right direction, and very much worth while.

A further fact of greatest interest in this connection is that a survey of our customers on the old form of rate, for the year ending October 30, 1925, revealed no increase in the consumption per customer, whereas the same analysis for the area rate customers, for the same period, reflects an increase in the per customer consumption of 11.6%

GENERAL EFFECT

In other words, although, as has been stated before, no claim to perfection is made for this form of rate, it constitutes a step in the right direction, and has had the effect, and will have so more and more, of increasing the company's earnings from the small unprofitable customers, while at the same time encouraging the profitable customers to a freer use of gas by virtue of a low energy rate.

This should be clear when it is remembered that the above results have been accomplished with only 58% of our customers on the area rate. Hence, when the 100% mark is reached, a losing customer should be a myth.

In time, therefore, the fixed per customer cost of rendering service will be borne by all customers equally, instead of having, as at present, one group of customers who are served at a loss, and, at the expense of another group, paying more than their fair proportion of the company's cost of rendering service.

The ideal structure of this rate would be a larger fixed charge and a lower energy rate, as, for instance, 50 or 60 cents per thousand cu.ft. It can be readily understood, however, that this result could not be accomplished at one time without a very material increase for the small consumer, and this would be entirely inexpedient.

Accident That Paid a Profit

(Continued from page 82)

serious an emergency with so little inconvenience to our customers.

A five-column twenty-inch advertisement, telling in simple and straightforward language the story of the accident and how it was met, was prepared, signed by Mr. Freeman, and inserted in all the Cincinnati daily papers Monday afternoon and Tuesday morning.

The results indicate that this was probably the most successful advertisement the company ever published in Cincinnati. The story was sufficiently dramatic to be read with great interest on the part of the public; in fact, the newspapers in some instances rewrote the advertisement and published it in their news columns, and the effect upon public sentiment was so distinctly favorable, both to the Union Gas & Electric Company and to the parent company, that we have been humorously accused of breaking the main on purpose in order to make so successful a good will demonstration.

ONE EDITOR'S THOUGHTS

Not the least of the evidence of the effectiveness of this type of advertising is the following editorial written by one of the gas company's most consistent opponents:

"Cincinnatus doesn't like the price the gas company asks for its gas and hopes the rate ordinance is defeated in this election, but he admires the gas company's spunk.

"In an almost inaccessible part of West Virginia a gas main crossing a creek broke at 7 o'clock Sunday night, and by great and heroic effort of loyal workmen the break was repaired by 7 o'clock Monday morning.

"And because the public was somewhat inconvenienced by this accident, the gas company, through its president, W. W. Freeman, addressed a statement of explanation to the public.

"Such an attitude toward the public and such a zeal to render good service is becoming to a public utility."

How To Organize a Home Service Department

With Special Reference to the Selection and Training of Personnel

By MARION ELIZABETH STARK, Fall River Gas Works Company

Miss M. E. Stark

THE first essential in organizing a Home Service Department is to find someone with scientific training plus sufficient experience to supervise this organization and to plan the work after the department itself is visible in the shape of a kitchen, a laboratory, or a demonstration room.

Logically, the person to look for is one who has completed four years of a college or normal school course. Such a training furnishes the theoretical background so necessary for solving the problems that are ordinarily met in well organized Home Service work. These problems are often serious, and their solution would be impossible without the proper training.

But this training alone is not enough, if the person is to give the best service in this new department. She must have been out in the world, met people, had home experience in cooking, and, if possible, had some experience on a demonstration platform or have talked before groups of people.

This last qualification is not often found in a young person, but even though she may not have done this phase of the work, if she is observant and naturally capable, she will pick up the necessary information rather quickly.

After obtaining the person to start the work of the department, the next thing to consider is the space available for the work. At first, only space enough for a desk and a file may be needed. The space for the file is as important as that for the desk, for, even from the beginning, while the work is yet in its infancy, important material will be coming in that will be lost if it is not properly filed.

From her desk the Home Service supervisor must come in contact with the customers. One way of getting acquainted may be successful in one town, and another way in another, but the department will never be a success, nor will it ever become a useful addition to the community, until the girl who sits at the desk has found a way to listen to the troubles of the women with whom she comes in contact.

If the department is just starting in the late spring or early fall, a series of canning demonstrations may make a good beginning; or at any time of year a special demonstration such as a Thanksgiving dinner, a June breakfast, or a May Day party may appeal to women. If a demonstration room is not at first available, it may be possible to send out invitations to all customers for a tea to be held some afternoon at the gas office. The more intimately the supervisor can come in contact with the women themselves from the very first, the more quickly will she become of greatest value to the company, for customers will soon begin to react to this feeling of good will.

A demonstration room is surely a help in reaching a large number of women at one time, but the demonstrations must be made informal, and the women in the audience made to feel free to ask questions and discuss the various points as they develop.

The demonstration platform may be made into a model kitchen, with up-to-date equipment installed, but this equipment must be reasonable enough in price to be within the reach of the average woman attending the demonstrations, or it will lose the greater part of its value from the very beginning.

"It Is a Poor Week," Says Miss Stark, "When We Do Not Average at Least One Telephone Call a Day. Fully as Many Women Stop to Talk Over Various Problems Personally."

Most women are interested in new ideas. Give them these ideas, and they will become somewhat used to the new order of affairs; for coming to the gas office for cooking and home-making information seems strange to them, and they wonder if they will not have to pay for this service sooner or later. They must be made to realize that the service is free, that it always will be free, and that it is solely for them, to give them better service, and help them to better understand the use of the gas range.

Telephone service is one thing we have been trying to develop here at the Fall River Gas Works Company, for we find that many women get a cake or some biscuits half mixed and are not quite sure of what to do next. At first a few women called me up in fear and trembling, thinking that they were asking too much. This information I gave out at various demonstrations omitting all names, of course, and urged more women to do this. I repeated questions that had been asked me, until now it is a poor week when we do not average at least one telephone call a day, and fully as many women stop at the desk in the main office and talk over various problems personally. We average beteen thirty and forty telephone calls each month.

"My strawberry jam will not stiffen. What can I do?"

"I have a sponge cake in the oven which is shrinking from the sides, and yet it is not done in the center. What shall I do?"

"I have a lot of sour milk on hand. Can you give me one or two good recipes for muffins or cake in which I can use this?"

"I want to make some oatmeal cookies for the kiddies. Can you give me a quick and easy rule?"

Another necessary part of the organization is a staff of helpful and cheerful assistants. The person in charge at the desk can only do a small part in making the department a successful one. According to the size of the town or city, there should be one or more trained workers to go out to call on all new customers to see if they are getting the best service possible; and, if they are not, to do everything possible to improve the service, or to report the trouble to the proper department. This person must be able to meet people on their own level, whether it be the wife of an Italian laborer, or the mistress of a large mansion, and adapt herself quickly to the circumstances in every case.

Home Service explains itself. It is better service for the home, and, when necessary, directly in the home. The department must adapt itself to the needs of the community, whether it be work in the main office, in the homes, in clubs, or in church circles, and above all be able to answer emergency calls at any time, willingly and cheerfully. Not until then is the Home Service Department doing its duty to the community.

HENRY OBERMEYER, who has been editor of the A. G. A. MONTHLY and assistant secretary of the Publicity and Advertising Section, has joined the advertising department of the Consolidated Gas Company of New York. H. F. Weeks, formerly News Editor of "Gas Age-Record", has been appointed to succeed Mr. Obermeyer at Association Headquarters.

An Alternative to Bookless Bookkeeping

With Special Reference to Accounting Problems of a Moderate Sized Gas Company

By I. R. JONES, Peat, Marwick & Company

I. R. Jones

BECAUSE of the very substantial amount of work involved in their maintenance, attempts have been made from time to time, particularly by utilities operating in large cities, to eliminate customers' ledgers by the introduction of a ledgerless system of bookkeeping for customers' accounts.

In all probability, however, the alternative records of transactions with customers advocated by those in favor of ledgerless bookkeeping for customers' accounts would prove to be unsatisfactory in comparatively small offices where the limited amount of clerical work required would not permit of the specialization of the duties necessary for the proper operation and control of a ledgerless bookkeeping system.

A form of customers' ledger based on the requirements of local officers of gas and electric utilities that serve between 5,000 and 10,000 customers, and designed to afford a reasonably complete record of service charges and collections, is shown in the illustration on the following page. This form, which is intended to be used in conjunction with the flat-opening type of post binders, is 14 inches by 11 inches in size. A form larger than 14 inches by 11 inches, or a form with the binding margin at the left hand end of the ledger sheet, would not be so convenient to handle when preparing customers' bills.

The customers' accounts are to be classified geographically according to location and route number, and the individual accounts on each route are to be maintained at all times in the sequence in which the meter reader's sheets are filed and the meters read.

In order that each route may be dealt with as an independent unit, both as regards posting of charges and credits and balancing of accounts, it is preferable that separate binders should be supplied for the accounts relating to each meter reading route.

Inasmuch as maps and street and connection indexes should be available for locating accounts by means of the customer's address, and the file of application for service cards should afford an alphabetical index of the accounts, no special indexes are necessary for the proper operation of the customers' ledgers.

Following the issuance of meter set orders, assignment of route and account numbers, and preparation of addressograph plates, the customers' ledger sheets are to be headed by means of the addressograph with the name and address of the customer and the route and account number, and the proper notations made on the meter set order as to the completion of this phase of the procedure.

On completion of the meter set order and receipt of the original of the order in the office, the initial meter reading and related details are to be noted in the spaces provided therefor on the customers' ledger sheets.

ENTERING OF CHARGES

Following the reading of the meters and delivery of the meter reader's books to the bookkeepers, the readings and dates of readings are to be copied in the customers' ledgers by the bookkeepers. Incidentally, it may be explained that under

Form 2210

CUSTOMER'S LEDGER

CLASS

DATE
DISCOUNT
SERVICE CHARGE
PREMISES OCCUPIED AS
REVENUE CLASS
COMPANY

DATE APPL'N
DEP.
DEPOSIT
RECEIPT NO.
DATE
DISCONNECTED
BILLING
INSTRUCTIONS

NAME
ADDR.
ADDRESS

DATE	INDEX	CONSUMPTION	DESCRIPTION OF CHARGE	OTHER CHARGES	TOTAL CHARGES	BILLING MEMO DISCOUNT	BILLING MEMO NET AMOUNT	CREDITS DATE	CREDITS REC'T	CREDITS CASH	CREDITS OTHER CREDITS	CREDITS TOTAL CREDITS	CREDITS BALANCE	REMARKS
FORWARD														
JAN.														
FEB.														
MAR.														
APR.														
MAY														
JUNE														
JUL.														
AUG.														
SEPT.														
OCT.														
NOV.														
DEC.														
JAN.														
FEB.														
MAR.														
APR.														
MAY														
JUNE														
JUL.														
AUG.														
SEPT.														
OCT.														
NOV.														
DEC.														

SECTION DATA	KEY	CHANGED	KEY	CHANGED	KEY	CHANGED	FLAT RATE DATA
CO. NO.							DATE CONN.
APP'S NO.							ORDER NO.
ROB.							L.KWPH.
TYPE							TOTAL WATTS
DATE							DATE DISC.
ORDER NO.							ORDER NO.

CONNECTED LOAD

NAME
ADDRESS
TOWN A.C.

CUSTOMER'S LEDGER

AUG., 1925

CASHIER'S STUB

KIND OF SERVICE	METER NO.	METER READINGS PRES.	METER READINGS PREV.	MULT.	CONSUMPTION	DATE	AMT. DUE IF NOT PAID BY 10TH CONSUMPTION	AMT. DUE IF NOT PAID BY 10TH OTHER CHARGES	DISCOUNT IF PAID BY 10TH	NET AMT. DUE IF PAID BY 20TH	AUG., 1925
ELECTRICITY											
GAS											

CUSTOMER'S RECEIPT
DATE PAID
CHECK NO.
GROSS AMOUNT
DISCOUNT
NET AMOUNT

TOTAL
ARREARS
ARREARS AT
INSTALLMENTS DUE
DISCONTINUANCE
CURRENT TOTAL

PLEASE BRING THIS BILL WITH YOU
DISCOUNT PERIOD EXPIRES SEPT. 10, 1925

LEFT HAND SECTION OF CUSTOMER'S BILL SHOWING CUSTOMER'S SECTION OF BILL AND CASHIER'S STUB

OFFICE RECORD

AMT. DUE IF NOT PAID BY 10TH CONSUMPTION	AMT. DUE IF NOT PAID BY 10TH OTHER CHARGES	DISCOUNT IF PAID BY 10TH	NET AMT. DUE IF PAID BY 20TH	AUG., 1925

TOTAL
ARREARS
ARREARS AT
INSTALLMENTS DUE
DISCONTINUANCE
CURRENT TOTAL

RIGHT HAND SECTION OF CUSTOMER'S BILL SHOWING CARBONIZED SECTION TO BE FOLDED OVER OFFICE RECORD SECTION, AND OFFICE RECORD OF CUSTOMER'S SECTION OF BILL AND CASHIER'S STUB

this procedure, the loss or destruction of a meter reader's book would not cause serious difficulty, because the data contained therein could be readily duplicated from the information available in the customers' ledgers.

After the meter readings have been copied in the customers' ledgers, the consumption of electricity or gas, being the difference between the previous meter reading and the present meter reading, should be computed and entered opposite the proper month, on the ledger sheet affected. When extending the consumption, the bookkeepers would be expected to be on the alert for apparent over or under meter readings and should be responsible for preparing the necessary verification requests in case errors in the meter readings are suspected.

On completion of the routine incidental to entry of meter readings and calculation of the consumption, the proper rates should be applied to the consumption, the charges computed by the bookkeepers and the gross amount of the billing, the discount, if any, and the net amount, if applicable, entered under the respective headings in the customers' accounts.

As soon as the charges have been entered, the customers' ledgers are to be delivered to typists for the preparation at one writing of the customers' bills and the recapitulation of customers' bills issued or revenue sheet required for financial accounting and analysis of revenue.

The credits to customers' accounts arising from cash receipts and discounts allowed for prompt payment of bills are to be entered daily in the customers' ledgers from the cashier's stubs retained for that purpose. At the close of each day, the postings are to be reconciled in total with the related entries appearing on the cashier's reports and the cash received records.

Credits in respect of overcharges and other adjustments are to be entered in the "Other Credits" column of the customers' accounts with appropriate references to indicate the nature of the entries.

CUSTOMERS' BILLS

Reference to forms used by representative public utilities in the United States and Canada in billing customers for service and other charges indicates a surprising lack of uniformity in this important phase of public utility accounting practice. This observation applies not only to such details as size, color and arrangement of printed matter on the bill forms, but also to the extent of the information furnished customers as to rate calculations, the procedure relating to arrears and appliance charges, and the manner of delivering bills. The forms referred to indicate, also, a wide variation in that portion of the office routine connected with the preparation of bills, accounting for revenue, and acknowledging receipt of cash collected.

While standardization of customers' bill forms may not be possible for some time because of variations in operating conditions and public service commission regulations, it is a matter of importance to each public utility that the type of bill used shall be the most appropriate in the circumstances, because of the recurrence of the billing work at monthly intervals and the necessity for keeping the billing expense within reasonable limits.

The illustration shows a form of customers' bill to be completed on the typewriter so as to produce at one writing (a) the customer's bill, including a cashier's stub, (b) a carbon copy of the cashier's stub and part of the bill to be retained as an office record in connection with the collection of the bills, and (c) the recapitulation of customers' bills issued or revenue sheet required for financial accounting and analysis of revenue.

This form of bill is intended to be prepared with three perforations; two of these perforations, namely the one dividing the cashier's stub from the left hand

(Continued on page 109)

Meter Prover Air Control 33⅓ P.C. More Efficient

MORE efficiency at very little cost is the most recent contribution of W. C. Fox, expert mechanic of the San Diego Consolidated Gas and Electric Company, to the proving of gas meters in the gas meter shop.

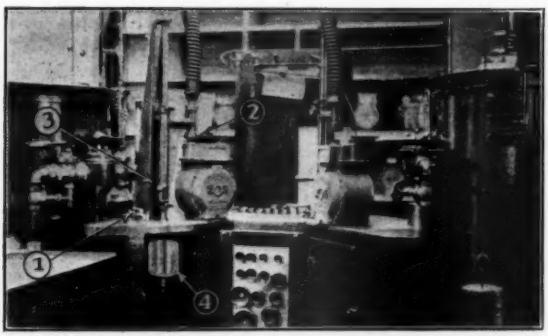
Fox is said to have perfected a meter prover connection control, which, by the use of air pressure, enables an operator to test 60 meters a day as compared with a maximum output of 40 with the old type of manually operated control.

It is estimated that these results can be averaged with the new device, and that 80 meters per day can be tested with it in emergency.

Under the old plan the operator was required to "break and set" the connection by his own strength, lifting the connection apparatus off each meter against the force of a heavy coil spring.

The accompanying illustration (3) shows clearly the manual handle (near the meter) which was formerly lifted for this purpose.

A heavy coil spring was located just above this handle, the operator having to lift against this. The spring served to keep the prover connection contact tight against the meter opening (2) to make an air-tight joint.



Showing the Meter Prover That Has Been Developed

The new connector performs this same process through the use of air pressure. The cylinder, or air chamber, in which the piston operates is shown in the photograph (4). It is operated by a 3-way valve (1).

As air is introduced into the cylinder (4), a piston forces the coil spring to be contracted and moves the prover connection apparatus upward and off of the meter at (2). As a new meter is placed in position on the table, the air pressure in the piston is released by the 3-way valve (1), and the heavy coil spring inside the cylinder (4) brings the connection down firmly upon the meter to be tested. No air is used to keep the prover connection in contact, the spring serving this purpose. Consequently there is no air leakage and no waste of air.

There are two adjustable valves in connection with the air "lift" which control the intake and exhaust of the air. These act as governors in case the main 3-way operating valve is opened too quickly. Thus it prevents jamming in case of a too quick exhaust or intake of the air in the air cylinder.

The connector can be adjusted for use on meters of various heights and sizes. It also permits the use of more pressure at the connection itself, since the pressure is not limited by the operator's physical ability to lift the prover connection off each meter.

The new apparatus was all made in the machine shop. It is built of steel, bronze and monel metal. Each prover connection control is an individual unit, mounted on its own steel plate base and may be removed easily for adjustments or repairs.

Speakers' Bureau for Industrial Gas

WITH reference to the work of organizing a Speakers' Bureau under the direction of H. O. Loebell, in the Industrial Gas Section, we are glad to be able to say that, as the result of a letter addressed to our members announcing the activity, we have had a great number of replies, practically all of which state their hearty approval of the project. To those companies who have not answered our inquiry, we can advise that the work has progressed to the point where we are composing certain prepared speeches from the vast amount of data available, for use by speakers before business men's clubs.

We would urge all companies who are interested, therefore, to arrange for definite speaking dates with their local clubs after February first, at which time we shall have the material available. Those gas companies who cannot provide speakers for such occasions can feel free to call upon the Speakers' Bureau for suggestions.

Gas Is the Answer to

What Makes the Hot House Hot?

The Homesick Orchid Finds Tropical Comfort in a Gas-Made Civilization

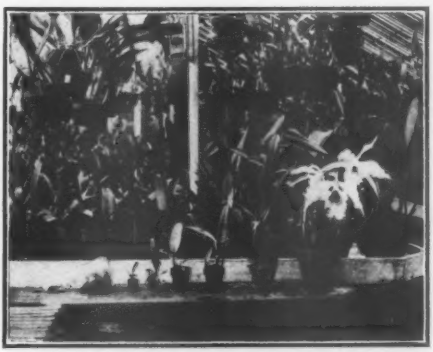
By D. L. GORDON, Louisville Gas and Electric Company

ONE of the unique uses to which gas has been put in the various industries is the reproduction of the tropical climate in which orchids are grown. These so-called "aristocrats of the flower kingdom" were formerly imported from the mountainous districts of the tropics, where they grow clinging to trees.

Because of the rareness and beauty of the orchid, the demand so far exceeded the supply that several florists in the United States have devoted their efforts to growing the plants from seed. This industry has rewarded its pioneers, they having succeeded in producing flowers more rare in color and texture than had been heretofore produced by nature. Further impetus was gained when the U. S. Bureau of Agriculture placed an embargo on the importation of the orchid plants.

The Albert Orchid Co., located at 129 N. Galt Avenue, is one of the few nurseries in the United States growing orchids from seed. Ten years ago, they started with six plants of a choice variety, and today the collection consists of between 40,000 and 50,000 plants, of which about 2,000 are blooming.

The seed of the orchid is almost microscopic in size, being comparable with very fine powder, and is incapable of self-germination. Germination is effected by scientific methods. The seeds are first placed in a glass flask, containing a specially prepared liquid, which furnishes them with the necessary carbon dioxide and moisture. The temperature is kept at about 90 degrees Fahrenheit in the daytime, and 70 degrees at night. Any sudden fluctuations of temperature would be disastrous to the young plants. The plants are grown in flasks for the first year, after which time they are transplanted into one-inch flower pots. They are transplanted year by year to larger pots. Each plant requires the individual attention of the grower.



Gas Heat Is Particularly Desirable for Orchid Culture Because Any Change in Temperature Would Involve the Loss of Several Years' Work.

The different stages in the life of the orchid are shown in the accompanying photograph. Note the group of plants in the flask to the left, and the stages of growth by years in the different pots from left to right.

The orchid plant starts to flower at the age of five or six years. As the plants grow older, they become more hardy, and can thrive in cooler temperatures.

The rare varieties of orchids are produced by crossing the choice plants. In this manner, the desired qualities in the flower may be obtained. The value of such plants ranges from $100 to $500.

The orchid is a tropical flower, and warm, moist, tropical conditions are essential to its growth. The climatic con-

ditions of the tropics are duplicated by the use of gas-heating equipment. In the propagating house, where the plants are most delicate, a gas-fired hot water system is used to keep a warm, even temperature.

Although other fuels have been used, gas is the most desirable, because with its use a better temperature regulation can be maintained. This characteristic of modern gas-heating equipment is of primary importance, as any sudden change in temperature would involve the loss of several years' work.

HOME SERVICE FOR THE DEAF AND DUMB

MISS MAYE LOVELL, who has charge of the home service work of the New York Consolidated Gas Company, has been conducting a class for deaf and dumb persons.

She says that this is the one case where the merits of gas as a fuel for cooking cannot be shouted from the housetops. In addition, she claims that these people are quick to respond to her instructions and that they appreciate all she is trying to do for them. Home service is something of which all who are interested in home making can learn; it is universal.

REGARDING REPRINTS

ONCE AGAIN we wish to remind our contributors and readers that reprints of any material published in the American Gas Association MONTHLY may be obtained in accordance with the following scale:

100 copies, 1 page	$2.00
Additional 100's	.40
100 copies, 2 pages	3.00
Additional 100's	.40
100 copies, 4 pages	7.00
Additional 100's	.75
100 copies, 8 pages	10.75
Additional 100's	1.05

These copies cover only actual printing costs. Reprints can be made according to this scale only if orders are received while material is still in type. Prompt action is, therefore, essential. Under any circumstances, permission of the author must be obtained before reprints can be made.

WINS NATURAL GAS PRIZE

C. D. Bell

THE FIRST PRIZE and cash award from the Natural Gas Association of America has been made to C. D. Bell of the Southern California Gas Company, for the best idea for facilitating the work in the natural gas industry. His ideas are embodied in three testing machines. The first of these tests all fittings before they are sent to be installed. Any defects in workmanship or material are discovered and the fitting is not used. By means of this, faulty workmanship and fittings containing small leaks are kept out of the lines.

The other two machines are for testing meters and regulators. These provide for a maximum of ease of operation, giving the operator ample opportunity to concentrate on the accuracy of the instruments being tested.

C. D. Bell, who is superintendent of distribution for the Southern California Gas Company, says that, when he had these ideas, he turned them over to F. A. Hamilton, in charge of the company's garage, and H. E. Ballard, who is general shop foreman. They worked out the details of these ideas and constructed the machines.

THE OTHER DAY

A BULLETIN PUBLISHER thanked the printers for their faithful team work in getting out bulletins on time even when copy arrived late. A wealthy lumberman sent a big box of candy to the telephone operators who had helped him complete another successful year. A lady stepping from a street car thanked the motorman for his careful and faithful service during the year.

A lineman received a medal for saving the life of a fellow worker; a group of power plant operators received recognition in a newspaper which called attention to the fact that one or more of the group was always actively on duty and that during the year the plant had never failed for one minute to keep service on the system.

A gas meter reader was given an order for some of his company's securities, because the customer was well impressed with the meterman's conduct when he visited the customer's premises month after month. And so we are finding that busy people have time to express their appreciation to those who have assisted them.

We wish to express our appreciation to all who have helped to make us comfortable and happy during the year and to all who have helped make our tasks lighter and our efforts more effective.

From Wisconsin Utilities Association Bulletin.

THE TIDE OF MEN AND AFFAIRS

A. M. APMANN, formerly connected with the Surface Combustion Corporation, has joined the utilization department of the New York Consolidated Gas Company.

CARL F. ASSENDORF, assistant manager of the Chicago office and factory of the American Meter Company, has been promoted to manager, taking the place of H. D. Harper.

PHILLIP M. WENTWORTH has been appointed to succeed Jefferson L. Alexander as manager of the Haverhill, Mass., Gas Light Company.

F. H. PATTERSON, auditor of the Rochester Gas & Electric Corporation, has been made general auditor of the Mohawk Valley Company. He will continue to be auditor of the Rochester Gas & Electric Corporation.

ROBERT J. CANNIFF has resigned as assistant to Albert R. Beal, head of the sales promotion and merchandising departments of the Central Hudson Gas and Electric Company, to become sales manager of the Standard Gas Equipment Corporation of New York. His headquarters will be Chicago.

R. B. LECKIE, who has been gas superintendent of the Kingston Gas & Electric Company, has resigned to accept a position with the Semet-Solvay Company of New York.

WALTER MURRAY AFRICA has been appointed to succeed his father, the later Walter G. Africa, as treasurer and general manager of the Manchester, N. H., Gas Company.

GEORGE F. WAGNER, treasurer of the Lowell, Mass., Gas Light Company, has resigned, and will be succeeded by John L. Eigenbrot, the present manager.

HALFORD ERICKSON, vice-president of the H. M. Byllesby Engineering & Management Corporation, has been elected president of the Wisconsin Public Service Corporation, which recently was acquired by the Byllesby organization. Clement C. Smith, former president of the company, was elected chairman of the board, and J. P. Pulliam remains vice-president and general manager. Other officers elected are: Vice-president, Robert J. Graf, Chicago, first vice-president of H. M. Byllesby & Company; vice-president, H. V. McKay, Milwaukee, formerly secretary-treasurer of the company; secretary, M. A. Morrison, Chicago, vice-president and treasurer of H. M. Byllesby & Company; treasurer, C. E. Rohlhepp, Milwaukee; vice-president, C. R. Phenicie, Green Bay.

JAMES A. SACKETT has been placed in charge of the Builders' Service Department of the Standard Gas Equipment Corporation. This department will include all three divisions of the company, Vulcan, Oriole, and Triplex.

FREDERICK GLAESER, formerly with the New York Consolidated Gas Company, has been transferred to the Bronx Gas & Electric Corporation.

C. G. CARPENTER, formerly with the Public Service Electric and Gas Corporation at Paterson, N. J., is now in the educational department of Hamlin & Company, of New York York City.

JOHN W. SHAEFFER, formerly with the Allied Chemical & Dye Corporation, is now connected with the Koppers Company in New York City.

DAVID P. ALLEN, who has been connected with the Des Moines, Iowa, Gas Company, is now assistant to the general superintendent of the U. G. I. Company at Philadelphia.

GEO. D. CONLEE, formerly with the Bailey Meter Company, is now with the Republic Flow Meter Company at Chicago.

W. T. SHINHOLSER, who has been connected with the Toledo Edison Company, has joined the Public Service Corporation of Colorado in Denver.

JAMES S. KENNEDY, formerly with the Standard Gas Light Company, is now assistant engineer of construction for the Consolidated Gas Company of New York.

H. M. ATKINSON, chairman of the board of the Georgia Railway & Power Company, has been awarded, by a board representing the leading civic bodies of Atlanta, the Georgian-American loving cup, which is given annually by these papers to the citizen who is adjudged the most valuable to the community during the year.

GEORGE H. SMITH, who has been gas engineer for the Central Hudson Gas & Electric Companies for the past 13 years, has joined the Empire State Gas & Electric Association, with offices in New York City, as gas engineer.

NEW COMPANIES ACQUIRED

THE HAMPTON, IOWA, GAS COMPANY by The Central Iowa Power & Light Company.

THE HANFORD GAS & POWER COMPANY, Hanford, California, by the controlling interests of the Southern California and Midway Gas Companies.

THE BOONTON, N. J., GAS, LIGHT AND IMPROVEMENT COMPANY by the New Jersey Power & Light Company, a subsidiary of the General Gas & Electric Corporation.

THE SACRAMENTO GAS COMPANY by the Pacific Gas & Electric Company.

THE STANDARD GAS EQUIPMENT CORPORATION of New York has purchased Rathbone, Sard & Company, manufacturers of gas ranges at Aurora, Illinois. This move doubles the production and gives national distribution to the Standard Gas Equipment Corporation. No changes in personnel are contemplated at present. The Acorn line of ranges will continue as a division of the parent company, such as the Vulcan, Oriole and Triplex Divisions.

THE SAULTE ST. MARIE GAS & ELECTRIC COMPANY, Saulte St. Marie, Mich., is now the Michigan Federated Utilities.

THE SOUTHERN UTILITIES CO., PALATKA, FLA., Lakeland Gas Co., Lakeland, Fla., Miami Gas Co., Miami, Fla., and Daytona Public Service Company, Daytona, Fla., have consolidated into the Florida Power & Light Co., headquarters at Miami.

THE SOUTHERN ILLINOIS GAS COMPANY, Murphysboro, Ill., has been consolidated with the Western United Gas & Electric Company of Aurora, Ill.

THE GRANVILLE, N. Y., ELECTRIC & GAS COMPANY has changed its name to the Eastern New York Electric & Gas Company, Inc.

OPPORTUNITIES ABROAD

A NEW HOTEL is to be built in Montreal. It will be equipped with all modern conveniences such as heating plant, ice-making machinery, laundry drying rooms, etc. It will cost approximately $1,000,000. Those interested should address the Bureau of Foreign and Domestic Commerce, Canada Special Report 172.

IT IS REPORTED that the British-American Coke and By-Products (Ltd.) will operate three large coke plants, two in Toronto and one in Montreal. American bituminous coal will be used exclusively. The substantial increase in coke consumption in Toronto is regarded as justification for the operation of two additional plants in that city. The anthracite strike in the United States gave an impetus to the use of coke, and dealers report that it will be difficult to persuade users of coke to return to anthracite after the strike is over. The United Gas and Fuel Company, Hamilton, Ontario, the second largest producer of coke in Canada, is having plans prepared for an extension to their present plant. The plans provide for an increase in production from 500 tons daily to 1000 tons. Manufacturers of equipment used in coke plants should communicate with this firm at their earliest convenience.

THE BUREAU OF FOREIGN AND DOMESTIC COMMERCE, Washington, D. C., is in receipt of a call for an agency for the sale of tools and fittings from Berlin, Germany. Further information may be secured by referring to Trade Opportunity 18687 at the offices of the Bureau.

GAS PIPE, black and galvanized, with threads and couplings, in random lengths, are required by a prospective purchaser in Tallinn, Esthonia. Those interested should refer to Trade Opportunity 18439, Bureau of Foreign and Domestic Commerce.

THE AMERICAN CONSULAR OFFICES at Copenhagen report that an agency is wanted for cooking stoves and ranges. Communication should be made with the Bureau of Foreign and Domestic Commerce, referring to Trade Opportunity 18440.

THE AMERICAN CONSULAR OFFICES at Berlin, Germany, report that an agency is wanted for cooking stoves and ranges. Those interested should communicate with the Bureau of Foreign and Domestic Commerce, referring to Trade Opportunity 18441.

HOUSEHOLD APPLIANCES are desired for purchase by a firm in Lyons, France. Trade Opportunity 18524, Bureau of Foreign and Domestic Commerce, should be referred to by those interested.

OUR NEW MEMBERS

MANUFACTURERS

Prudential Insurance Co. of America, Newark, N. J.
American Meter Company, New York, N. Y.
Pacific Meter Works, San Francisco, Calif.
Detroit Vapor Stove Co., The, Detroit, Mich.
Glass Co., Arnold F., Birmingham, Ala.

COMPANY MEMBERS

Superior Water, Light and Power Co., Superior, Wisconsin.

ACTIVE MEMBERS

Taylor, David M., Consolidated Gas Co. of N. Y., New York, N. Y.
Weeks, Joseph F., Kings County Lighting Co., Brooklyn, N. Y.
Strickrott, Alfred G., Adirondack Power & Light Corp., Schenectady, N. Y.
Hall, Thos. H. Jr., The Barrett Co., New York, N. Y.
Miller, Stuart P., The Barrett Co., New York, N. Y.
Wentworth, Reginald A., The Barrett Co., New York, N. Y.
Briggs, C. Dwight, Conn. Light & Power Co., Norwalk, Conn.
Mulqueen, Frederick J., Canadian & General Finance Co., Toronto, Ont., Canada.
Curran, Harry Paul, Central Union Gas Co., New York, N. Y.

Morillo, Ramon, Porto Rico Gas & Coke Co., San Juan, P. R.

Joy, George H., Porto Rico Gas & Coke Co., San Juan, P. R.

Price, Edwin W., Porto Rico Gas & Coke Co., San Juan, P. R.

Robinson, Jr., A. S., Porto Rico Gas & Coke Co., San Juan, P. R.

Reading, Robert Sherrard, Southwestern Gas & Electric Co., Texarkana, Ark.-Tex.

Dillon, H. J., Brooklyn Borough Gas Co., Coney Island, N. Y.

Dillon, Miss Mary E., Brooklyn Borough Gas Co., Coney Island, N. Y.

Steers, Mrs. Helen S., Brooklyn Borough Gas Co., Coney Island, N. Y.

Steers, Jr., Alfred E., Brooklyn Borough Gas Co., Coney Island, N. Y.

Daly, John, Brooklyn Borough Gas Co., Coney Island, N. Y.

Newman, Samuel, Brooklyn Borough Gas Co., Coney Island, N. Y.

Zengal, Fred, Brooklyn Borough Gas Co., Coney Island, N. Y.

Zengal, Mrs. Anne, Brooklyn Borough Gas Co., Coney Island, N. Y.

Sinelick, Harris B., Brooklyn Borough Gas Co., Coney Island, N. Y.

Sherwood, Jessie, Brooklyn Borough Gas Co., Coney Island, N. Y.

Stehman, Frederick, Brooklyn Borough Gas Co., Coney Island, N. Y.

Droge, John, Brooklyn Borough Gas Co., Coney Island, N. Y.

Godsoe, John, Brooklyn Borough Gas Co., Coney Island, N. Y.

McIntire, William, Philadelphia Suburban Gas & Electric Co., Chester, Pa.

Dawson, K. L., Nova Scotia Tramways & Power Co., Ltd., Halifax, N. S., Canada.

Stansbury, Raymond P., Consolidated Gas, Electric Light & Power Co., Baltimore, Md.

Stockton, W. V., D. McDonald & Co., Albany, N. Y.

DiCarlo, Anthony, Consolidated Gas Company of New York, New York, N. Y.

Robertson, Alexander Ewing, The Western Gas Construction Co., Fort Wayne, Indiana.

Nickerson, H. L., Southwestern Gas & Electric Co., Shreveport, La.

Alexander, John R., The Koppers Company, Pittsburgh, Pa.

Dexter, Forrest P., Stone & Webster, Inc., Boston, Mass.

Avegno, Edward N., New Orleans Public Service Co., New Orleans, La.

Porter, Charles H., Cambridge Gas Light Co., Cambridge, Mass.

Lee, John M., Public Service Co. of No. Ill, Chicago, Ill.

Jones, Ivor R., Peat, Maswick, Mitchell & Co., New York, N. Y.

Stafford, Walter K., Magee Furnace Co., Boston, Mass.

MANUFACTURED GAS SALES MAKE NEW RECORD IN 1925

OFFICIAL FIGURES made public by the American Gas Association show that the manufactured gas companies of the United States sold 421 billion cubic feet of gas in 1925, a new high record.

This is an increase of 16 billion cubic feet over 1924, and a five-year increase of 100 billion cubic feet. In the last ten years sales of gas have more than doubled.

Steady expansion of plant and distribution facilities during 1925 enabled the 984 gas companies in the country to connect 403,000 new customers to their lines, making a total of 10,600,000 customers as of December 31, 1925. Total population served by gas companies is now 52,000,000.

While both domestic and industrial use of gas show steady increases, the use of gas in industry alone has shown a gain of one thousand per cent during the last ten years, with the trend distinctly upward at the present time. A large increase has also taken place in the heating of homes by gas, a development that will be largely accelerated if the anthracite strike continues. The increase in gas-fired house heating systems has averaged more than 2,000 per cent since 1919. New installations are being made at the rate of 100,000 a year.

Out of more than nine million meters actively in service during 1925, only 3,232 were in receivership. Sales of securities by gas compaines to their employes and customers in 1925 were 32 per cent over those of the preceding year, while the number of purchasers increased 85 per cent.

The N. G. A. and the Laboratory

THE work of the Technical Committee of our association is accomplishing much in the way of fixing standards, but we should have a more definite manner of approving appliances, or warning the public against inefficient or dangerous gas devices.

The American Gas Association has established a laboratory at Cleveland, Ohio, where all sorts of gas appliances are tested and approved, condemned or improved. The Natural Gas Association of America is endeavoring to make some sort of equitable arrangement whereby technical and financial aid will be offered the American Gas Association toward the splendid work they are doing in Cleveland.

It is time to give more support and encouragement to the makers of good gas goods, and to join in the activities of the A. G. A. Laboratory seems like the best thing presenting itself to our association.—Natural Gas, November, 1925.

A Gas Plant Built on Piles

By BURTON SMART
Portland Gas Light Company, Portland, Me.

A VERY interesting bit of construction now nearing completion at the plant of the Portland Gas Light Company, Portland, Me., is their recently authorized contract with the West Gas Improvement Company for the installation of additional vertical retorts to the capacity of 750,000 cu. ft., thereby increasing their present coal gas equipment 75 per cent.

On account of the land where this was to be built formerly being part of the old harbor, it was necessary to put in the very latest method of construction, and therefore the management decided on the concrete, pre-cast, reinforced piles 16 inches square and 65 feet long; in addition to these, five batter piles 18 inches square of the same length, the length of these piles being determined by test borings.

The piles were reinforced with eight 7/8" steel rods running the entire length and tied by 5/16 steel every six inches at either end for a distance of 5 feet and every twelve inches the balance of the length of the pile. A V-shaped cap was cast on the bottom point of the pile. These piles were allowed to set for six weeks and then were hoisted in place and driven with an 11B steam hammer which strikes the equivalent of a 12-ton blow. A wood cushion was used between the top of the pile and the steel hammer and in this way most of the piles went to refusal with the end of the pile almost in perfect condition.

The entire cost of the addition to plant, including the foundation, is approximately $200,000, the foundation alone being installed by the A. M. Hazell Company of New Jersey, contractors who have had considerable experience with this type of pile both in bridge and railway foundations around New York and New Jersey.

With this unit completed, the Portland Gas Light Company will be able to make straight coal gas up to 1750 M daily output. This will, of course, increase the coke output about 50 per cent, and, in view of the present coal strike, this fact is particularly interesting to the thousands of coke customers of the company.

SWISS FIRM BUILDS "DRY QUENCHING" PLANT

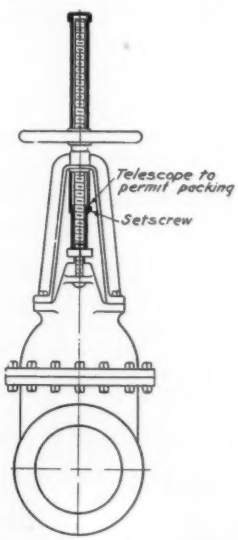
THE TERM "DRY QUENCHING" sounds anomalous. However, that is how the Rochester Gas and Electric Corporation will be treating its coke within a few months. This utility has contracted with Sulzer Freres of Switzerland to build a plant having a capacity of 425 tons of coke per day wherein the hot coke received from retorts and ovens will be cooled by the circulation of inert gas, and the sensible heat will be converted into steam.

The result is a dry coke, said to be less fragile than water-quenched coke; less "breeze" or degradation product; the absence of steam and gas, always a part of water quenching; and a very attractive production of steam as a credit against the cost of the process. Several such installations are in service in Europe and have been visited by the general superintendent of the Rochester Company, but this will be the first unit of its kind in America.

Keeping Dirt and Sand Out of Gate Valve Stems

E. BELL of the Astoria gas department of the Pacific Power and Light Company submits the following plan for protecting the threads on gate valve stems in outside locations.

Considerable trouble has been experienced with sand and dirt working into the threads and causing the valves to stick so tight that two men were required to operate them. This can be overcome by installing pieces of pipe of the proper size to fit over the stem and prevent dirt from coming in contact with the threads. For the extension of the stem above the hand wheel a piece of pipe with cap screwed on the upper end is sufficient. For the section of stem below the yoke it is necessary to provide two pieces of pipe which will telescope one within the other in order to permit repacking the stuffing box. The larger pipe



should be placed in the top position in order to shed dirt and may be held in place by a set screw. The valve stem should be well doped with cup grease. With this protection the valves will operate as easily as those in protected inside locations.

Affiliated Association Activities

New England Association of Gas Engineers

THE 56th Annual Convention of this association will be called to order on Wednesday, February 24, at the Hotel Somerset, Boston, Mass., by President H. N. Cheney. There will follow reports of directors, secretary, treasurer, and an address by the president. H. C. Abell, president of the American Gas Association, will then address the convention, followed by the presentation of a paper, "Use of Low Pressure Steam in Gas Plants," by R. E. Krueger, of Rochester, N. Y.

In the afternoon, Prof. Philip Cabot, an able speaker and well-known member of the faculty of the Harvard School of Business Administration, will address the convention on "Salesman or Merchant." Following this address, there will be discussions of various questions relating to naphthalene and soft coal.

On Thursday, February 25, the morning session will be given over to a discussion of the change in by-laws, which, if accepted, provides that the New England Association of Gas Engineers will merge with the other New England Associations to form the proposed New England Gas Association.

A paper on "House Heating" will be presented by Mr. Winn of Fall River.

In the afternoon there will be discussions on "House Heating Rates", "Metering of High Pressure Gases", and "Experiences with Combination Cement and Lead Joints", followed by a paper on "Progress Made in Detarring of Artificial Gas with the Cottrell Electrical Precipitation Equipment," by N. W. Sultzer, of the Research Corporation of New York.

The principal item of entertainment will be Wednesday evening, February 24, at which time a dinner and entertainment will be provided in the ballroom of the Hotel Somerset. Following the entertainment there will be dancing.

In the words of Secretary J. L. Tudbury, "altogether, it looks like a real New England Party, and to which we would be glad to welcome anyone interested in the gas business."

Illinois Gas Association

The Sixth Joint Convention of the Illinois Gas, Electric and Electric Railways Associations will be held in Springfield, Illinois, on Wednesday and Thursday, March 17 and 18, 1926. A program of state-wide interest to every branch of the utility industry is being prepared. As in the past years, there will be joint morning sessions and separate afternoon sessions for each Association. The joint sessions will be held at 9:30 a.m. at the Hotel Abraham Lincoln and the afternoon sessions of the Illinois Gas Association will be held at 2:00 p.m. at the Leland Hotel. On one evening there will be an entertainment program and the other an educational program, details of which will appear in the convention program which will be available about March 1st.

Pacific Coast Gas Association

The second regional meeting this year of this Association will be held in San Diego, Calif., on February 18 and 19. The first day will be devoted to committee meetings and the second day to a general meeting at which papers and reports will be read. A decision as to whether a gas appliance exhibit should be arranged in connection with the annual convention will likely be made at this regional meeting.

METER COURSE AT PURDUE

The Engineering Extension Department of Purdue University announces the Second Annual Conference for Gas Metermen which will be held at Lafayette, Ind., under the direction of the School of Chemical Engineering on February 17-18-19. Professor H. C. Peffer, Head of the School of Chemical Engineering, will be Chairman. A program of interest to managers, engineers, superintendents and metermen is being arranged. The University will again have the assistance of G. A. Lane of the Peoples Gas Light & Coke Co., and A. T. Barrett of the American Meter Co. The first very successful conference held last year was attended by 60 men from 28 cities of Indiana, representing 20 utilities. It is hoped that the attendance this year will be 100. Further detailed information can be obtained from W. A. Knapp, Professor in Charge, Engineering Extension Dept., Purdue University.

PURCHASING AGENTS MEET

The Public Utility Group of the National Association of Purchasing Agents held an interesting meeting at the Hotel Van Curler, Schenectady, N. Y., on January 28 and 29.

Alexander Forward, secretary of the A.G.A., spoke on "The Value of Association Work," and brought before the meeting interesting and vital facts concerning the work and importance of associations.

E. A. Munyan, purchasing agent of the Northern Indiana Gas and Electric Company, Hammond, Ind., brought up the question of "Standardization" for consideration in the open forum, and A. H. Rhubart, purchasing agent of the Utica Gas and Electric Company, Utica, N. Y., brought up "Price Records" at the same meeting.

At the second open forum, U. O. Rogers, purchasing agent of the Portland Gas and Coke Company, Portland, Ore., brought up the problem of "Should a Public Utility Operate a Print Plant."

Building Your Advertisements So They Will Not Be Buried

By WILLIAM M. MATLACK

THERE is no need to complain that "our advertisements are so small that they almost always are buried in the maze of daily newspaper advertising." To the experienced layout man this is a lame excuse. He will tell you that no matter how small your advertisement may be you can make it stand out on any page in any newspaper and in any day's run—if you will build it inside a border of sufficient white space (this writer recommends that at least 20 per cent of the space be white).

GAS
For Your Unused Fireplace!
Enjoy this cheerful, cozy, open fire in your living room—without wood, ashes, smell, smoke, flying sparks or trouble—ready on the instant.
The Humphrey Radiantfire
Come and See It!
$1.00 Down, Balance Monthly With Your Gas Bill
YOUR GAS COMPANY
Illinois Power and Light Corporation

Do You Think That This Advertisement, Because of Its Typography and Layout, Could Be Buried?

There is a trick in this, you may hear some one say—and there is. The trick, however, is a simple one, the obvious—the doing of the thing that the average advertiser does not do—use white space generously.

The advertisement reproduced here will clearly indicate to the readers of the American Gas Association MONTHLY what may be done to make their advertisement stand out on any page, keep them from being buried, no matter how much bla and black they may have to compete with. Look at it, study it—why, you have seen advertisements very much like it before—yes! the same illustrations, the same copy—but, it looks different. What is it? Why, it's the layout.

Yes, that's it. It is "put together" differently. It is made from a well known manufacturer's mats, and from the mats, furnished by a monthly service, a logotype signature, a few rules and just the common variety of type found in any daily or weekly newspaper. The difference, the thing that keeps it from being mediocre, is the white space. Its handling clearly indicates the professional touch. Try it on your next series and see if they do not stand out. Watch their added pulling power.

The Value of Home Service

By FLORA B. FREY

The East Ohio Gas Company

THE object of a Home Service Department in a gas company is to bring about better gas using methods on the part of its customers. This means better results for them, increased satisfaction on their part, an enlarged use and usefulness of gas, and better relations between customer and company.

The means employed are, of course, educational. As in the case of Home Service itself, this word is very broad. It all hinges on just what is actually done, just what methods are actually used, and are effective in influencing people to practise better ways of burning gas. Direct contact is the most effective and the most difficult. Lectures, demonstration and every opportunity of every employe to suggest that there are good as well as bad ways to burn gas, get over to customers that first fact in the extension of good gas education.

It is clear that a Home Service Department must be always ready to take advantage of this interest on a customer's part. For this reason a Home Service Department is constantly maintained with well trained instructors and demonstrators who have a wide variety of gas appliances with which to illustrate their proper application and most efficient use.

A customer who has been first awakened to the fact that there is a decided difference, to her own advantage, between modern gas methods and those that are obsolete or poor, is the best means of spreading the news. A single balky water heater or range that has been

(Continued on page 116.)

Why We Cannot Heat Our Homes By Electricity

An Answer to Henry Ford's Famous Prediction Based on Economic Grounds

By R. M. SEARLE, Rochester Gas and Electric Corporation

R. M. Searle

ELECTRICITY is such a convenient servant of the home that the question is often raised. "Why cannot the home be heated by this same agency?" An analysis of the economics of the situation will very quickly lead one to the conclusion that this is not practical under our present conditions of generation and distribution of electricity.

The use of electricity in the homes for heating purposes should not be confused with the use of electricity in industrial plants for the performance of certain operations which require high temperatures. Electricity is used in industrial processes, not because it is cheap—as a matter of fact, it is much more expensive from the standpoint of a heat source alone than other competing sources—but because it affords close and automatic control of temperature and other working conditions which could not be obtained in any other way and which make electricity's use the best regardless of its cost.

Let us first consider steam-generated electricity. It is a very good power plant which will deliver to the switchboard one kilowatt-hour for 18,000 heat units consumed under the boilers. One kilowatt-hour can deliver, if we allow for no transmission and conversion losses, but 3,415 heat units. This is only 19% of the available energy in the coal which is consumed. From the standpoint of the conservation of the nation's resources then, house heating by electricity would seem to be a great extravagance.

There is no doubt that future technical developments, such as the mercury turbine, extra high pressure boilers and prime movers, etc., will reduce the energy units required for the generation of a kilowatt-hour by a very considerable amount. It is hard to believe, however, with our present knowledge of what the future seems to hold in store, that this will ever be reduced to the point where the use of electricity for an application which does not require very exact regulation will be justified.

Attention should be called to the fact that house heating does not require the close regulation which is necessary in the many industrial applications of electricity. Investigations carried on by the American Society of Heating and Ventilating Engineers indicate that there is a permissible variation in room temperature of approximately seven degrees for comfortable conditions.

It will be useful to compare the cost of heat delivered to a residence under conditions which exist at the present time from the various sources available. With anthracite coal at $15 per ton burned in the ordinary house-heating furnace, one cent will purchase between 8,000 and 9,000 useful heat units. With gas at $1 per thousand cubic feet, one cent's worth of gas will deliver between 4,000 and 5,000 heat units. With oil at ten cents per gallon, the energy delivered is somewhere

between these two figures, depending largely on the efficiency of the burner and the furnace installation. If electrical energy could be delivered for 1½¢ per kilowatt-hour, one cent would deliver, assuming a 100% efficiency of utilization, 2,300 heat units.

The question of the price which must be charged per kilowatt-hour for electricity used for house heating depends for its answer upon local conditions of generation and distribution. It is perfectly possible that, under certain circumstances and in certain localities, it might be possible to sell electricity for house heating at such a figure that it would compete in cost with the fuels ordinarily available. For instance, with a large hydraulic station for which a suitable industrial and lighting load had not as yet been secured, it would be possible for a time, and until the ordinary industrial load had been built up, to sell electricity for house heating at a very low rate, since the additional cost of generating this energy would be very small. However, as soon as such a plant had developed the ordinary industrial and lighting load, it could not continue to sell electricity for house heating at a figure which would compete with the other means available. That electricity will ever be used generally for house heating does not seem probable, because of the following reasons:

The annual load factor of such a heating load is very low, approximately 30%. Generating and distribution equipment must be installed to supply the demand of, perhaps, four or five days during a winter when the temperature may fall to zero or below, while for four months of the year there would be no use at all for this capacity, and during a large part of the remainder of the time the system would be used only at partial capacity. The other applications of electricity where it is the only agent which can be used to advantage are developing so rapidly that it does not seem at all probable that there will be any large amount of surplus energy available which can be used for such a comparatively crude application as that of house heating as long as there are other and cheaper means available.

POWER MEN GET GAS BUSINESS

THE PACIFIC POWER AND LIGHT COMPANY has taken the first step in an endeavor to develop its gas business into a growing and prosperous one. Walla Walla and Clarkston, Wash., and Lewiston, Idaho, have been chosen as the territory in which to start the program.

As a beginning, the rates for residential service in these towns have been adjusted so as to eliminate, as far as operating requirements will permit, certain factors which experience has indicated as possibly being responsible for a retarding effect on the growth of gas sales to this class of business. High initial and minimum charges have been greatly reduced, and an incentive has been established for much greater use of gas in the home for cooking, water heating, and auxiliary air-heating purposes by so shortening the rate blocks and reducing the later block rates that such additional gas may be used under rates that must appeal to customers as being entirely reasonable and not at all excessive for the service received.

An additional departure from ordinary gas rate practice has been made by establishing a schedule of rates somewhat lower for customers having water heaters than for those having only cooking service. The new rates are shown below and are being applied on all meter readings taken on or after November 15, 1925.

The effectiveness of the new rates has been limited to one year to allow for such later changes as the results of the experiment may warrant. During that year an intensive campaign will be waged to educate the public to the advantages of gas service which has been placed within their reach by the new rates.

Rate: Where installation does not include gas water heater.

First	200 cu.ft.	$1.05 Minimum
Next	2,800 cu.ft.	2.00 per thousand
Next	2,000 cu.ft.	1.60 per thousand
Excess over	5,000 cu.ft.	.95 per thousand

Rate: Where installation includes gas water heater.

First	200 cu.ft.	$1.05 Minimum
Next	1,800 cu.ft.	2.00 per thousand
Next	3,000 cu.ft.	1.30 per thousand
Excess over	5,000 cu.ft.	.95 per thousand

Discount: 5% when paid within 10 days of date of bill.

THE PACIFIC GAS AND ELECTRIC COMPANY has announced that the construction of a new gas plant in Oakland will be started immediately. The estimated cost will be $1,000,000. Sixty-one acres of land have been obtained for this and other improvements. The plant will contain a 10,000,000 cu.ft. holder of the waterless type.

An Alternative to Bookless Bookkeeping

(Continued from page 97)

end of the carbonized section of the bill, and another dividing the right hand end of the carbonized section of the bill from the office record, are to be utilized when the completed bills are being prepared for distribution to the customers, while the third perforation is intended to facilitate separation of the customer's section of the bill from the cashier's stub at the time the bill is paid by the customer.

The only billing equipment necessary for the efficient use of the customer's bill form shown herewith is a medium carriage standard typewriter to be equipped at a nominal cost with a front feed attachment that permits of the bills being inserted from the front of the platen or feed roll, without interference with the recapitulation sheet and the carbon sheet to be used simultaneously with the bill form. In large offices, however, it would be possible to utilize, under favorable operating conditions, electrically operated billing machines that would permit of verification of the calculations on the bills at the time the figures are copied from the customers' ledgers.

In order to expedite the work of the typist, the dates of meter readings, consumption of electricty or gas, rate and amounts to be billed have been arranged in the same sequence on both the customers' ledger and the bill form. As a result, the average typist should be able to complete at least five hundred bills in a day provided the addressographing and folding operations have received proper attention. On this basis, the cost per bill is comparatively low, when it is considered that only inexpensive equipment is necessary for completion of the bills and that the recapitulation of bills issued or revenue sheet required for financial accounting and analysis of revenue is produced simultaneously without extra expense.

BILLING PROCEDURE

Following is an outline of the procedure to be followed in completing the customers' bill:

1—Fold bills vertically at perforation in middle of form for convenience in impressing name and address of customer.

2—Impress name and address of customer by means of addressograph in lower left hand section of bill and at right hand end of cashier's stub and office record sections.

3—Fold bills at perforation between carbonized section and office record section in order that a carbon impression will be made on office record section when the bill is typed.

4—Insert recapitulation sheet and sheet of carbon paper in typewriter and complete heading on recapitulation sheet as to class of service, month, community served, and route number.

5—Insert bill form in typewriter by means of front feed attachment, type account number in left hand margin of recapitulation sheet and complete bill from customers' ledger as to kind of service, meter number, meter readings, constant, if applicable, consumption, rate, gross amount, discount and net amount. Inasmuch as the customers' ledger accounts and the bill forms are intended to be in the same sequence, only ordinary care would be necessary to ensure the names on the bills being in agreement with the titles on the ledger sheets.

6—Check bills by proof of calculations and comparison of entries on recapitulation sheets with the charges on the customers' ledger.

7—Type bills and complete recapitulation sheets in respect of skipped meter readings and other delayed charges.

8—Enter arrears in proper spaces on customer's bill and cashier's stub. These entries should not be made until shortly before the bills are to be released so as to avoid the necessity of eliminating items collected between the time the postings are made and the time the bills are released for distribution. Indelible pencil can be used to advantage in entering arrears, as, in this way, the original bill and cashier's stub and the carbon office record may be completed simultaneously.

9—Enter appliance charges in proper spaces on bill and cashier's stub. This class of items is to be dealt with in the same manner as arrears, except that the entries will be made from the special ledgers in which appliance accounts are carried.

10—Enter on bills with indelible pencil, if applicable, the combined totals for electric and gas service charges, arrears and appliance charges.

11—Check bills against customers' ledger accounts as a precaution against failure of typist to bill charges appearing on the customers' ledger.

12—Detach office record and carbonized section at perforations to the right of cashier's stub. The office record section is to be retained and the carbonized sectioned destroyed.

13—Detach section containing customer's bill and cashier's stub vertically at middle and enclose in small window envelope, after which envelopes may be sealed and the bills mailed.

14—File office record section of customer's bill in order of route and account number. This section of the bill is intended to be used as a collection record and affords the basic information for the issuance of delinquency or cut-out notices to customers who neglect to pay their bills within the prescribed period.

GAS MEN SAVE BOY FROM DROWNING

WALTER YOUNG, nine years old, of Darby, Pa., had a narrow escape recently when, coasting down a hill on his express wagon near the Darby Works of the Delaware County Division of the Philadelphia Suburban Gas and Electric Company, he lost contol of the wagon.

The wagon sped down the hill and across the ice which covered Darby Creek, and as he reached the center, the ice gave way, dropping the lad and wagon in the creek, which at this point is about six feet deep. His screams were heard at the office of the Gas Works and William E. Lafferty, storeroom assistant, responded. He reached the creek after the boy disappeared under the water and ice, and in order to save him, crawled out on the surface of the ice on his hands and knees. His weight, however, was too great, the ice broke and Lafferty fell through.

Edward Lucke, assistant foreman of Darby distribution, arrived by this time and jumped into the creek and with the aid of Mr. Lafferty, the lad was pulled out of the water, carried up the hill to the gas office, and there Mr. Lafferty gave the boy the Schaefferprone method. After 10 or 15 minutes' work, the lad showed signs of life.

The gas company's physician, Dr. Lenox Dick, was called on the telephone and immediately responded. Upon seeing the boy's condition, he had his clothing removed, the water drained from his lungs, and then continued the Shaeffer method.

After a half hour, the boy became conscious, was wrapped in blankets and taken to his home by Dr. Dick and is now reported as having resumed his studies at school.

The young man owes his life to the quick action of Lafferty and Lucke of the gas company, as well as to other employes of the company who assisted them.

The Gas Safety Code, which was officially adopted by the Convention of the Association in October, has been given final approval by the American Engineering Standards Committee and is in effect as of December 28, 1925. The Code had previously received the approval of its cosponsor, the Bureau of Standards.

How One Gas Company Advertised for a Rate Increase

Frankness Disarmed Criticism, and All Arguments Stuck to Facts, With Results as Below

By THOMAS J. MERCER

THE use of newspaper advertising to promote the advantages and the sale of the service of public utility companies is not uncommon, but it is only occasionally that one finds extensive space being used to acquaint the public with facts upon which authority is being asked to increase the rate for such service. A recent example of the latter use of newspaper space is found in Los Angeles, where the Southern California Gas Company prefaced the public hearing on an application for a rate increase by a series of eleven advertisements in the daily newspapers.

As in practically all communities and states, nowadays, the privately owned public utility corporations of California are under regulation by a state commission. In California, the functions of control are exercised by the State Railroad Commission. Any proposed increase must be submitted by the public utility corporation for a hearing before the commission, and in such hearing any citizen or interested party may appear and be heard on any question or objection pertaining to the application.

In matters of this kind, it is not uncommon to find a great deal of dust being raised and strong appeal being made to old prejudices. But in the rough experiences they have been through during the years of criticism, attack, regulation and almost miscroscopical scrutiny of their acts, the public utility corporations have learned a few things themselves, not the least of which is a better understanding of human nature in the individual and in mass. They have learned that the short cut to an understanding with the fair-minded public is an open and aboveboard attitude, a straight-forward admission

Gas

Improvements

Constant care is exercised to adopt improvements and make economies in the methods of handling gas. These savings have benefitted those who use gas by giving them better gas for less money.

Mounting costs of materials, supplies, and of gas have made it impossible to maintain the present rates.

This is the fundamental reason why the Southern California Gas Company has asked the State Railroad Commission for a revision of the Los Angeles gas rates.

This is one of a series of advertisements which are to tell our customers why we are applying to the State Railroad Commission for an increase in rates in Los Angeles. Should you miss one of these advertisements and wish to be glad to furnish you with copies of them.

Department of Information,
Southern California Gas Company
920 So. Broadway Los Angeles

GAS

Selling Something More Than Gas

that things may not have been done as they should have been done in the old days, and a statement of facts so plain and simple as to rout prejudice and sus-

From Printers' Ink.

picion from the public mind and turn its attention to consideration of the real issues involved in the application.

This policy finds expression in the series of display advertisements run by the Southern California Gas Company prior to the date of hearing on its application for a rate increase. The array of concrete facts upon which the application was based were presented one at a time for six consecutive days in six daily newspapers, so that, for eleven weeks prior to the hearing, one of these advertisements of the gas company appeared in one Los Angeles newspaper every week day. The first nine of the series discussed briefly the facts, and to the last two called particular attention to the hearing itself, on September 28. Some of the topics covered were:

Day Wages and Monthly Salaries.
Gas Pipe and Gas Meters.
Gas Equipment and Investment.
Cost of Gas.
Living Costs.
Improvements.
Quality.
Public Interests.
Control.
Public Hearing.

The following is an example of the presentation of a single topic, the first of the series under the heading: "Day Wages and Monthly Salaries:"

Not many years ago those who worked by the day were paid one dollar and a half for twelve hours' work. One hundred dollars a month was considered a high salary. Even during the past ten years salaries have increased greatly. Your Gas Company is paying an average of 50 per cent more today for the same class of work than it did in 1914. During the year 1924 almost three million dollars was paid out in wages by the Southern California Gas Company. If this same labor had been done in 1914, taking the average, it would have cost the Gas Company less than two million dollars.

This is one of the fundamental reasons why it is necessary for the Southern California Gas Company to apply to the State Railroad Commission for a revision of their rates in the city of Los Angeles.

Carrying through the expression of the company's desire to supply full information to the interested public, each of the first nine advertisements of the series was supplemented by the following paragraph:

This is one of a series of advertisements which are to tell our customers why we are applying to the State Railroad Commission for an increase in rates in Los Angeles. Should you miss any of these advertisements, we shall be glad to furnish you with copies of them.

Supplementing the newspaper campaign, the company attached to all Los Angeles service bills in the three months preceding the hearing stickers bearing a printed message conveying briefly the salient facts contained in the series of advertisements. The principal point made was that, while the cost of living and the cost of materials and other factors entering into gas service had increased in ten years, the cost of gas to the consumer had remained the same. Approximately 500,000 of these stickers were sent out.

The thoroughness of the company's campaign might well be considered to have been amply sufficient to call into action all the opposition, latent or active, to the increase. Yet, it is of interest to note that, in response to the entire campaign, less than forty people appeared on the day of hearing, and out of the forty less than a dozen had any complaint to make before the commission.

GAS EXHIBITION AT ANTWERP

Many of our readers doubtless still remember the great success attained by the International Gas Exhibition held in Antwerp in 1913. This industrial display made a tremendous impression; and its effect as a means of propaganda for gas for all purposes was remarkable. Encouraged by the memory and success of the International Gas Exhibition in 1913, a committee composed of several of the same members have decided to organize at Antwerp, Belgium, in May, 1926, a new exhibition dealing with gas and its various uses. This enterprise, which is under the auspices of the Imperial Continental Gas Association at Antwerp, is receiving encouragement from all sides; and everything points to unprecedented success.

Those desiring information concerning the exhibition should apply to the secretary's office, Gas Company, 58, Meir, Antwerp.

MANUFACTURERS SECTION
WATSON E. DERWENT, Chairman W. E. STEINWEDELL, Vice-Chairman
C. W. BERGHORN, Secretary

Modern Practice in Making Gas Pipe Joints

Bronze-Welding and Air Testing at the Foundry Reduce Trouble in Laying Distribution Lines

By H. Y. CARSON, American Cast Iron Pipe Company

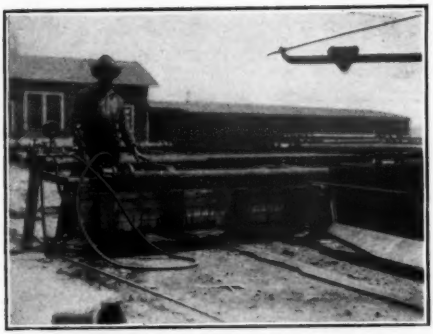
THE best practice in the welding of pipe joints seems to be to make about 5 per cent of the joints of bronze welding construction and 50 per cent of the "Bigler Ring" joint construction. This method permits of the welding being done at the foundry where two or three standard length pipes are converted at the minimum cost to Bell & Spigot pipe in lengths of 30′ to 40′. The joints in the field between sections of pipe and at fittings are then made by means of the Bigler Joint.

The Bigler Joint is made with a hollow core ring. The so-called "Paranite C" composition for these rings seems to be the most popular, but any of the other commercial compositions, such as "Goodrich No. 18" or "The All-Work" may be obtained. These Bigler gaskets are molded or vulcanized in a hollow ring shape having a cross section slightly larger than ¾" in the body of the ring.

In making a field joint with this ring, it is first streched over the spigot end of the pipe and "rolled" a distance of about two feet up the barrel of the pipe. Next, after putting the spigot of the pipe home in the adjoining bell, and centering it carefully with a strand or two of jute or hemp, the rubber ring is "yarned" into the bell by means of an ordinary yarning tool.

The task of putting this bulky rubber ring into the space of the bell is not quite as simple as may at first seem to the average joint calker. To accomplish the work properly the ring must be calked back by causing it to "roll" over the surface of the pipe until it begins to enter the bell.

Making Up Long Lengths of Pipe by Bronze Welding Standard Lengths Together at the Foundry in Birmingham Before Shipping or Placing in Trench.



Illustrating the Type of Air Pressure Test Apparatus Being Used for Making Air Test of Cast Iron Pipe.

The task is then simplified if the operator is careful first to cause the ring to enter the bell only a slight amount at, say, four or more points, that is, at the top and bottom and two sides of the bell. This prevents the ring from tending to "buckle" as it is forced back into the bell.

The next part of the task is to cause the ring to "roll" on back against the yarn in the bottom of the bell by tapping the ring at points adjacent to the pipe surface with a yarning tool. The rubber ring itself cannot further be calked after it is in the joint, because it will only spring back and forth, but if it has been put in right, it will sustain by itself, without adding any other material on top of it, as much as 75 pounds of gas pressure. The final operation, however, is to completely confine the Bigler Ring in the Joint, and this is best accomplished, in our opinion, by calking a strand of jute and lead on top of it. Some engineers may prefer jute and cement for this final retaining material, but at any rate the principle will be identically the same, namely, shutting off the path of escape for the rubber.

We may now add that our knowledge of bronze-welding has been greatly increased from recent research on that subject. We have arrived at two important conclusions concerning an ideal bronze weld for cast iron pipe. The ultimate strength of the welding job depends upon (1) the shape of the weld, and (2) the temperature at which the weld is made. These two factors, if properly taken care of, will produce a strength equivalent to the original strength of the cast iron pipe. Reduced to a definite practice, we are now carrying out the work as follows:

(1) The ideal weld is made by operators who are able to so coordinate their work that the welding time per joint is at the rate of approximately 2 minutes per inch outside diameter of cast iron pipe. The correct time for completing ideal bronze welds on various size pipe is, therefore, approximately as follows:—

2″—five minutes
3″—eight minutes
4″—ten minutes
6″—fourteen minutes
8″—nineteen minutes
10″—twenty-three minutes
12″—twenty-seven minutes, etc.

(2) The total width of bronze welds should not be greater than 1 3/4 times the pipe thickness. The edges of the ideal bronze weld should join the cast iron surfaces in the form of a "feather edge" rather than in the form of an abrupt angle. The thickness of ideal bronze welds should be at its thickest part not greater than 1/4, nor less than 1/5, the thickness of the pipe.

SHIPPING PIPE LINES READY TO LAY

J. H. Bock, engineer of the Tampa Gas Company, in the *Gas Age-Record* of May 23, 1925, describes the construction of a new gas plant last year at Clearwater, Fla.

In addition to what he says in his valuable article, some other matters concerning piping layout may be of general interest.

Some entirely new ideas were worked out on this job. Among other things the pipe was shipped to the job in 30 to 40 foot lengths. This was accomplished by bronze-welding two or more plain end pipes together at the foundry and shipping in open gondola cars to Clearwater, Fla. It was a surprise for some to learn that out of more than 10,000 individual

lengths of pipe thus welded and shipped in 30 to 40 foot lengths not a single broken length was reported. This bears further significance when it is known that no special instructions or suggestions were offered by the manufacturers as to how this long length pipe should be handled on the job. It was of considerable interest to see the men who handled this long pipe normally using greater care in handling than they would have exercised with standard or shorter lengths.

Cast iron pipe is known to be a sturdy product capable of much rough handling, but when shipped in the long lengths the careless handling no doubt is eliminated largely because of the greater probability of breaking the longer lengths. The reduced trouble from rough handling the long length pipe is, therefore, explained on a psychological rather than a mechanical basis.

Moreover, we found that from the construction standpoint, lessened cost and greater speed resulted from shipping pipe in 30 to 40 foot lengths from the foundry to the job.

One other novel feature or departure from standard pipe foundry practice that was carried out on the material going to Clearwater consisted of air testing every foot of pipe at the foundry. Each length of pipe, after first passing an hydraulic pressure test of 300 pounds per square inch, was put in a special press which submerged the pipe under water and subjected it to approximately 80 pounds per square inch air pressure. Some pipe that had successfully passed the hydraulic test was rejected on the air test.

The cost for performing such tests is nominal and in no sense prohibitive.

LOCALIZING SPECIFICATIONS

PUBLIC SERVICE ELECTRIC & GAS COMPANY evidently believes in the policy of specifications for gas-burning appliances, and particularly favors those appliances which comply with the specifications of the American Gas Association. Ever since the A. G. A.

A Certificate that Tells People of the Quality Standard They Can Expect.

specifications were promulgated, Public Service has bought only such appliances as conformed to them.

Public Service has encouraged manufacturers to build appliances to meet these specifications, and has given publicity in its advertising and other sales promotion work to the benefits to be derived from this policy. The above certificate, which Public Service places on each gas range it sells, is another step in its educational work to protect its customers from buying poorly designed and inefficient appliances.

LIST OF APPROVED FLEXIBLE GAS TUBING

Type	Manufactured by
3/8" Gaspruf Stove Tubing with "Eureka" Ferrules	Atlantic Tubing Co.
5/16" Gaspruf Stove Tubing with "Eureka" Ferrules	Atlantic Tubing Co.
5/16" "W" Gas Tubing with "Eureka" Ferrules	Atlantic Tubing Co.
5/16" Evertite Tubing with Eastman Aluminum Ferrules crimped on	Eastman Mfg. Co.
5/16" No. 324 Sta-Tite Flexible Gas Tubing with Shrader Ferrules	New York Gas Tubing Co.
5/32" Titeflex Flexible Tubing with "Shrader" Ferrules	Titeflex Metal Hose Co.
1/4" Titeflex Flexible Tubing with "Shrader" Ferrules	Titeflex Metal Hose Co.
5/16" Titeflex Flexible Tubing with "Shrader" Ferrules	Titeflex Metal Hose Co.

Mass Production and Employe Insurance

THE idea of mass production has made life insurance possible at a very low rate to our employes," says a recent bulletin of the Birmingham Electric Company, Birmingham, Alabama. "This has been accomplished since November 29, 1916, when we first provided protection against death or permanent total disability under a Group Life Policy with The Travelers Insurance Company.

"In keeping with the development of group insurance we have arranged for a revision of our policy to provide greater and more liberal benefits.

"Effective July 20, 1925, all employes except common laborers will be eligible for $1,000 of life insurance.

"There will be no physical examination for those who apply now and there is no age limit. This plan is offered to all employes from the oldest to the youngest.

"The cost to each employe will be 75 cents a month deducted from his or her pay monthly. The company will pay the balance of cost and advance the entire premium.

"In the event of the death of an individual from any cause the Life Insurance will be paid to his beneficiary in a lump sum.

"If an employe is totally and permanently disabled through accident or sickness before reaching age 60—the face value of the policy will be paid in monthly installments to him.

"For those eligible employes who apply and are insured for this coverage and later terminate their employment, provision has been made whereby in case of termination of employment for any reason whatsoever, the insured employe is entitled to have issued to him by The Travelers Insurance Company, without medical examination, a policy of life insurance in any one of the forms customarily issued by that company, except term Insurance, in an amount equal to the amount of his life insurance under this plan at the time of such termination provided an application is made to the insurance company within thirty-one days. The premium for such life insurance shall be the premium applicable to the class of risks to which he belongs, and to the form and the amount of the life insurance policy at his then attained age.

"These benefits are entirely independent of and in addition to the benefits provided for by the compensation laws of the State."

The Value of Home Service

(Continued from page 106.)

converted into a helpful domestic performer makes of its owner a booster for gas and for the company that was interested enough to point out the way to these better results. By teaching and actually showing gas users better ways to use gas, more uses are found for it, more dependence is placed on it and its use, therefore, increases. This is the value of a Home Service Department in selling gas. It not only helps to maintain, but it enlarges the domestic load. But it must be a real Home Service, and not an empty but high-sounding phrase.

A single friendly act that renders an actual assistance to a customer does more good to acquaint that customer of the true nature of the gas company than all the flowery gestures in the world. The Home Service Department, therefore, makes the gas company very real and live to its customers—it is no longer a name, but a real, human presence. It relates the company to the customer in the oldest and most easily understood terms, contact with a helpful action. In addition there is the more tangible advantage, on both sides, of better understanding and genuine interest.

The Flowers That Bloom in the Spring, Tra-la

Are Equally Accommodating in the Winter, Provided Gas Is Handy

By GEORGE L. MEYERS, Portland Gas and Coke Company, Portland, Oregon

BELOW is a photograph of the boiler installation at the Koida Greenhouse, Milwaukie, Oregon. The boiler is a 15 h.p. Gasco Water Boiler, rated at 500,000 B.t.u. per hour. The maximum consumption will be 1100 cu.ft. per hour at maximum rating.

The boiler is provided with a Robertshaw thermostatic gas valve with graduating device to avoid backfiring when the gas is turned on or off, actuated by an Erickson electric-magnetic valve, distantly controlled by a Minneapolis Heat Regulator contained in the house having the highest temperature. The steam lines and returns are provided with valves to establish (by means of a variable flow of water) a definite relationship between the higher or lower degree of temperature carried in the various houses.

This greenhouse contains a fern house, carried at a temperature of 60 degrees, with a glass area of 2,000 sq.ft. and a chrysanthemum house, carried at 50 degrees, having a glass area of 8,000 sq.ft.

The average temperature deficiency for Portland, considering a temperature of 50 degrees Fahrenheit, is 27,800 B.t.u. per sq.ft. of glass area, over the heating season, or 70,700 B.t.u. per sq.ft. over the heating season for a departure from 60 degrees Fahrenheit. Therefore, the chrysanthemum house, having 8,000 sq.ft. of glass area, requires 224,000,000 B.t.u. over the season, whilst the much smaller fern house, with a glass area of 2,000 sq.ft., requires 14,000,000 B.t.u.

To produce sufficient heat over the season, 800,000 cu.ft. of gas of 570 B.t.u. are required, allowing a boiler efficiency of 80 per cent. The gas bill for the heating season will be $440, or a cost of 4.4¢ per sq.ft. of glass area. It is interesting to note that the previous bill for 54 cords of wood at $8 was $430, plus $100 for the cost of sawing, stacking, firing and ash removal.

This 15 H.P. Boiler Heats Two Greenhouses, 25 Feet Wide and 300 Feet Long, Burning About 1200 Cu.ft. of Gas per Hour.

COPIES of the following industrial gas series booklets are still available, and may be had by writing to Association Headquarters:

House Heating,
Bakeries, Hotels and Restaurants,
Food Products,
Combustion (revised edition),
Industrial Data Sheets.

Saying It Better With—Gas

By M. O. GOLDSMITH, Graphic Arts Engraving Company, Philadelphia

AN ANCIENT proverb, which some credit to the Chinese, declares that "One picture is worth ten thousand words." As the reader turns the pages of this or any other publication the pictures tell stories that cannot as effectively be portrayed in words —and the gas man helps in no small way to make these pictures possible.

The art of pictorial reproduction has progressed wonderfully since its inception a little more than thirty years ago, and no doubt will improve further as time goes on. It is unlikely, however, that any fuel will ever take the place of gas with its flexibility of control and economy in performing several important phases of the photo-engraver's work.

All drawings or photographs, which the photo-engraver terms "copy," must first be photographed by his camera. The glass upon which the negative is coated is washed and perfectly polished over a gas flame. It is then coated with a collodion base, immersed in a solution of silver nitrate and exposed while still wet. After developing, the negative must be dried quickly and evenly. A specially constructed gas oven has proved to be the ideal equipment for this important operation. If the negative is made from a photograph or painting, it is photographed through a superimposed "screen" of ruled optical glass which forms the picture into a composite pattern of dots of varying sizes. These dots can readily be seen upon close examination of the accompanying halftones. This screen, too, is carefully polished and dried over the gas flame.

A sheet of polished metal is next coated with a solution of bichromated glue; then clamped on a whirling device and whirled over a small gas stove burner to dry it. The centrifugal force developed in the whirling distributes the coating evenly over the surface of the plate.

The negative is next printed by intense light on this sheet of coated metal and to render it more legible and permanent it must be "burned in." This operation is done over the burners of a specially designed hot plate, the metal plate being heated until it reaches a cherry red color. The plate is then etched and re-etched by acid which removes the metal from between the dots or lines allowing them to stand out in relief. All through this process the plate is washed many times and dried over the gas burner.

In case the plate is what is known as a line etching of a pen drawing, like cross-word puzzles, cartoons, etc., it is etched to a slight depth with acid and then a resinous powder, technically known as "Dragons' Blood", is brushed over the plate to prevent the etching acid from undercutting. This type plate is powdered and etched four times and each time the powder must be baked on so that it will not wash off in the acid bath. This operation must be done quickly and evenly. The etcher usually needs both hands to handle the large plates and a by-pass valve connected to a foot treadle permits him to regulate the heat quickly and turn it off after the baking operation.

The plate is then ready to have the remaining "dead-metal" removed so that it will not print. This is done by a routing machine, which is a rapidly revolving bit on a radial arm. The cutting bit is made from the finest tool steel and as is the case with many craftsmen, the router prefers to do his own tempering. A small gas furnace enables him to do this to his complete satisfaction. The plate is then cleansed of all dirt and the cleaning solution washed out with a strong jet of water. The plate must be dried instantly over the top burner to prevent corrosion. It is now finished and ready to have the first proof "pulled." Sometimes it is necessary to again re-etch to some extent or do some additional hand finishing. Occasionally, too, in the case of a line etching, the router may route out a little portion of the printing surface. When this happens the damage is repaired with a gas blow torch and some solder.

COMMERCIAL SECTION
ROBERT J. CANNIFF, Chairman — J. J. BURNS, Vice-Chairman
R. L. BURDICK, Secretary

Putting Gas House Coke On the Market

Extracts from an Essay Which Won £30 in the British Gas Journal Competition for Papers on "The Sale and Utilization of Coal"

By F. W. SMELTS, British Columbia Electric Railway Company

SINCE the year 1916, our coke production has shown a yearly increase from 2,534 tons to 20,000 tons for the year ending June 30, 1925. This rapid increase necessitated the organization of a coke sales department and the development of aggressive sales methods in order to enable us to dispose of the yearly make of coke.

The Vancouver market consists of the following:

1. Iron works, where coke finds are in the core ovens, the size preferred being lump coke.
2. Apartment houses and large public buildings.
   a. High and low pressure steam installations, which use a 50-50 mixture of coke breeze and coal slack.
   b. Hot-water installations: Any size coke from lump to breeze, mixed with varying proportions of nut coal or slack coal.
   c. Hot-air installations: Mostly lump coke and lump coal or nut coal is used in plants of this particular type.
3. Bakers: For portable ovens and brick ovens, lump coke is the favorite fuel. At least 95% of the local bakeries are using coke.
4. Greenhouses: These plants are heated entirely by hot-water Robin Hood type furnaces. Lump coke is used exclusively.
5. Poultrymen: Both nut coke and briquets are used in small brooder stoves.
6. Miscellaneous industries: (a) Galvanizing works; (b) Carbonic acid gas works; (c) Candy manufacturers; (d) Blacksmiths. All of these prefer lump coke with the exception of the blacksmiths, who utilize nut coke.
7. Householders:
   a. Fireplace: Lump and egg sizes of coke and briquets are used widely.
   b. Kitchen ranges: Nut coke and briquets.
   c. Hot-air and hot-water furnaces: Egg size or lump coke or briquets make the ideal fuel. In cases where the operator in charge of these furnaces is thoroughly versed in the use of coke, 25% of breeze can be added to the coke and burned efficiently or satisfactorily.
   d. Heaters: The same as under "C", except that the addition of breeze is not desirable.

COVERING THE FIELD

The sales manager looks after out-of-town merchants. This was of great importance at the start of our campaign, as

Where the Coke Is Screened—Proper Sizing and Screening of Coke Is Essential. A Rule of the Coke Sales Department Is Never to Accept an Order From a New Customer Without Asking for What Purpose He Intends to Use the Coke.

Sacking Coke for Delivery—After Going Through the Screens the Coke, Properly Sized, Is Dropped into Hoppers, Where It Remains Until Required for Delivery. The Sackers Are Shown Getting a Load Ready for the Next Customer.

such was quickly worked up in a large enough volume to somewhat reduce our stocks.

One salesman looks after all industrial customers and another man handles the domestic business. We find that it takes entirely different types of men for these two jobs, and we also use different sales appeals. In the industrial field, economy and price appeals bring the best results, while in the domestic field, cleanliness is the major attraction.

One of the most objectionable features we discovered at the outset was the utter apathy and, even worse, the continuous criticism of our coke as a fuel from a number of the company's employes. Some of the men had bought coke and did not understand how to use it. The employes at large are beginning now to realize that the company is in the coke business just as much as in the gas or electric business, and also that they have a right to be just as proud of the coke as they are of the company's other products and services. It is of the utmost importance to have your own employes boosting coke. An indifferent or slighting remark made by an employe can easily turn a prospect on whom your salesman has worked for weeks.

The salesman's greatest help is judicious advertising, but it is essential that the closest cooperation between the selling and advertising departments be maintained. We make seasonable appeals to the public, and when we ask a man to buy, we show him why it is to his advantage to buy.

It is not enough to say that coke is smokeless, sootless and economical. We tell our customers about the tremendous waste of fuel that is represented in smoke, about the damage to interior decorations and draperies, about the quick deterioration of paints, etc., caused through smoke; we explain how soot is a heat insulator, how it causes chimney fires. Then we go on and show why a ton of coke delivers more B.t.u.'s into the home than a ton of coal. The simplest language has to be used for all this, and every fact has to be driven home again and again.

FOLLOW UP AND SERVICE WORK

When the coke is delivered, the most important work of the coke department starts.

The driver hands the customer a delivery slip, which gives short directions on how to use coke. He also tacks up an instruction card in a convenient spot near the customer's furnace.

A copy of the delivery slip goes to the sales office and a follow-up postcard is mailed to the customer. Then the shipment is entered on a card file, giving the customer's name, address and telephone number.

When a customer phones in a complaint, a personal call is made by a salesman, and usually an actual demonstration of the correct method of firing coke will overcome all difficulties. If, after such a demonstration, a customer is not satisfied, we take the coke back free of charge and refund the money. We find that it pays to do so, even at a considerable expense, because it leaves the customer in a more amiable mood, and he is not so liable to go out of his way to knock coke. As a matter of fact, this happens only once or twice a year.

Periodically the file cards are checked over by the domestic salesman, who phones up every customer who does not re-order within a reasonable length of time. To customers who have no phones, and live in outlying districts, a form letter is mailed. From time to time, usually three or four times a year, we send a personal form letter to all our coke customers, perhaps to wish them a Merry Christmas, or to announce a change in prices, or some improvement in the quality of our coke.

It is only fair to state that a good deal of the credit for the increase in our coke sales is due to the preparation of the coke at the gas works. No matter how thoroughly and how wide-awake the

sales organization, you cannot sell a water-soaked coke, improperly sized. We have made it a rule never to accept an order from a new customer without inquiring for what purpose he intends to use the coke, and our men are specially trained to give sound advice as to what sizes are most suitable for certain appliances.

By using the ways and means described in this paper, we have doubled our sales in two years' time and are adding this year another 25%. A persistent, aggressive sales effort is sure to increase the revenue from coke and keep the stocks down to a minimum.

The Meter Reader As a Salesman

(Continued from page 88)

small amount of space that we were able to buy in the newspapers for the same money.

This paper is of the standard newspaper size and of four pages. The first page is devoted entirely to copy, and this is continued on the three other pages with the advertisements. The feature article is usually about cooking or some other item of special interest to the women.

The continuations of these articles are on those pages where the advertisements are located as a tie-in. For instance, if the feature article is on cooking, the continuation of it is on the page with the advertisement on stoves; if on washing, on the page with the washer ads; and if on home lighting, with a special offer on lamps, etc.

Two columns on the first page of each issue are devoted to a write-up of one of our local industries, as an additional means of improving customer relations and in promoting the welfare of these industries. By means of this paper, we are able to get several messages to the public each month. We also have sufficient space to run an advertisement on each of the appliances that we are making a special effort to sell at the time.

The women are becoming more and more interested in the paper and are asking for it each time. If they lose a copy, they ask for another. They save the papers for the recipes and other valuable information. We feel that this paper is well worth the money and effort required to publish it.

USE OF TAGS TO EXPEDITE SERVICE

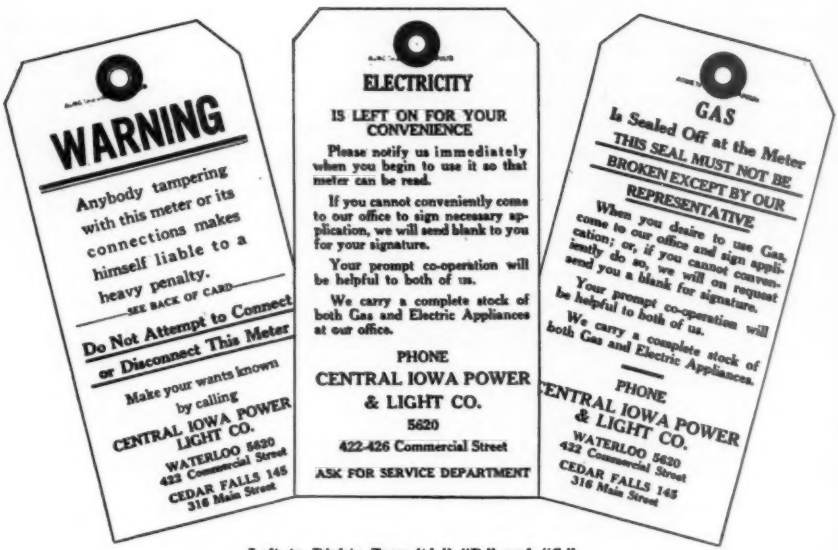
We use the tags as illustrated below to assist our customers to obtain service with the least possible delay.

Tag "A" is attached to the meter, and is printed on red cardboard to warn customers against tampering with the meter. Tag "B" is attached to a lighting fixture in the living room and notifies a customer that current is left on for their convenience. It notifies them that the routine application for service can be signed at the office to suit their convenience, or that it will be mailed to them for their signature. Meters are left in vacant homes for three months, and we feel that the small amount of energy used more than offsets the expense of removing the meter and replacing it later.

Tag "C" is a warning to the customer and others that the meter must not be disconnected or connected by anyone except our representatives.

We are thoroughly sold on the Meter-Reader-Salesman plan, and we believe that every utility can adopt it with slight variations. It can be adapted to a property of almost any size with slight changes.

We have set up a quota for 1926 that is 50% higher than last year's sales, and we believe that we can reach it very easily. We believe that any other property can


WARNING
Anybody tampering with this meter or its connections makes himself liable to a heavy penalty.
SEE BACK OF CARD
Do Not Attempt to Connect or Disconnect This Meter
Make your wants known by calling
CENTRAL IOWA POWER & LIGHT CO.
WATERLOO 5620
422 Commercial Street
CEDAR FALLS 145
316 Main Street
ELECTRICITY
IS LEFT ON FOR YOUR CONVENIENCE
Please notify us immediately when you begin to use it so that meter can be read.
If you cannot conveniently come to our office to sign necessary application, we will send blank to you for your signature.
Your prompt co-operation will be helpful to both of us.
We carry a complete stock of both Gas and Electric Appliances at our office.
PHONE
CENTRAL IOWA POWER & LIGHT CO.
5620
422-426 Commercial Street
ASK FOR SERVICE DEPARTMENT
GAS
Is Sealed Off at the Meter
THIS SEAL MUST NOT BE BROKEN EXCEPT BY OUR REPRESENTATIVE
When you desire to use Gas, come to our office and sign application; or, if you cannot conveniently do so, we will on request send you a blank for signature.
Your prompt co-operation will be helpful to both of us.
We carry a complete stock of both Gas and Electric Appliances.
PHONE
CENTRAL IOWA POWER & LIGHT CO.
WATERLOO 5620
422 Commercial Street
CEDAR FALLS 145
316 Main Street

Left to Right: Tags "A," "B," and "C."

do the same by this plan, and we hope that other utilities will adopt it in the near future as a solution for many of their problems. We will be glad to give any additional information to those who are interested.

A GAS MAN'S "IF"

If day by day you always keep your temper,
And feet on feet, yes, yards of pipe you run,
And do not cuss when oft you smash your fingers,
You're doing fine, my lad, you're going some.

If you can clean that filthy, smeary gas stove,
And make the burners work as good as new,
And leave the gosh darn thing all shining brightly,
Great credit, boy, will surely come to you.

If you can clean the house lines good and thorough,
And make your joints each one both firm and tight,
And leave consumers happy that you've been there,
Then you can sleep right soundly every night.

If, when the whistle blows, you're on your way, sir,
Not minding if your muscles are all sore,
If need be e'en forget such things as lunch time,
You've earned your keep, old sock, and something more.

If you can mind your business, never heeding,
The gossips, chatter jabber 'n talk,
But plod along through many weary minutes,
You're treading paths where only saints may walk.

If you can keep your temper when the ladies
All crab and say your work is on the bum,
Yours certainly is a temperament angelic,
I'll tell the world that that is going some.

If trouble clerks with orders overload you;
You see the sun go down before you quit,
And stand the gaff and yet you keep a smile on,
Believe me, pard, the boss'll shake your mitt.

If hour by hour you breathe the gas around you,
With nose and lungs a-smartin' from the smell,
And hang on till the job is done, is finished,
I'll tell you what, old kid, you're doing well.

If you can hang to your mazum' till pay day,
And not be shooting craps or matching nick's,
You will not have to beg or steal or borrow,
And when it rains, you'll have good leather kicks.

If then you take a precious week's vacation
With mind off money, conscience free and clear,
Then you'll have dough to make the jaunt a pleasure,
And wife and kids will say that you're a dear.

If you should think that in all of this chatter,
There isn't either bit of sense or rhyme,
Go ask the boss to tell you all about it,
But don't get sore, if he gives you your time.

If all your life you've been a good gas workman,
Remaining to the end both tried and true,
You need not worry 'bout your finish,
For good St. Peter'll surely see you through.

TECHNICAL SECTION
JOSEPH P. HAFTENKAMP, Chairman WALTER C. BECKJORD, Vice-Chairman
H. W. HARTMAN, Secretary

High Pressure Keeps the Holder Up

Novel Electric System in Rochester Automatically Guards Against Possible Interruptions to Service

By WM. N. WHITNEY, Rochester Gas and Electric Company

FROM the early days of the industry "The Gas House Terrier" lived true to his trust and under discouraging conditions kept sufficient gas in the storage holders to maintain service. It is true that today we have improved working conditions and modern equipment, but the principle still holds; and it has become almost a religion with the operating man to maintain gas pressure on the town under any and all circumstances.

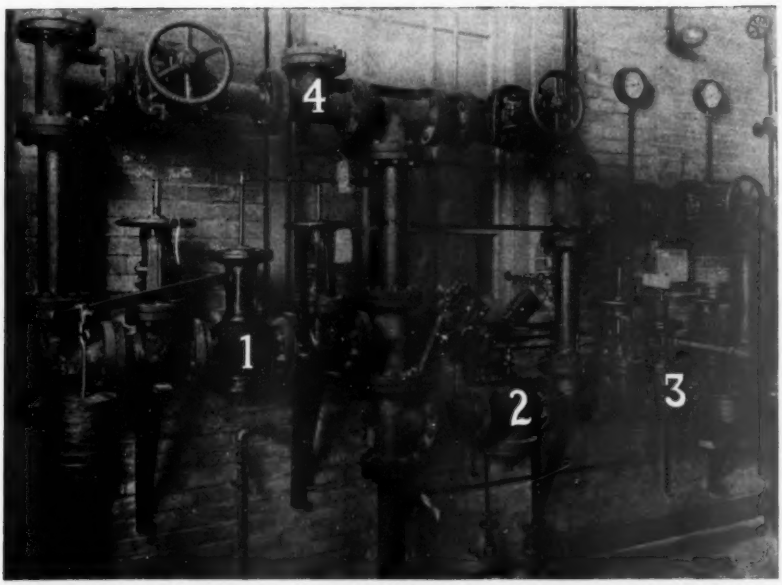
A recent installation at our Blossom Road Holder illustrates this point. Pittsford, Fairport, Benfield, East Rochester and the adjacent communities are supplied by a 6-inch high pressure main from No. 10 Holder at Brighton. Besides the domestic consumer, several important industries are supplied from this line. This main is 12 miles in length, and it is necessary to compress the gas up to a pressure of 30 lbs. per square inch at the holder, so as to maintain suitable service at the consumers' premises. A large Duplex Ingersoll-Rand compressor is employed for this purpose. Electricity is the cheapest power for operating this unit, and accordingly a 100-horse power induction motor is employed.

The gas demand along the East Rochester line increased at such a rapid rate that last year the problem was presented of how best to take care of the situation in the event of an electric interruption. Even though these interruptions are few in number, yet it is necessary to provide some means of maintaining gas supply in such a contingency.

Because of the particular local conditions at the holder station, a year-around spare drive, by either gas or steam engines, would prove very expensive, and the decision was made to build an automatic high pressure tank installation. This arrangement is entirely new and, so far as we know, was never before attempted in the gas industry.

The scheme called for a design of equipment able to store gas in sufficient quantities under high pressure, which

General View of High Pressure Tanks. 1. Pop Valve. 2. Weatherproof Manhole. 3. Pop Valve. 4. Cut-off Valve. 5. Swing Joint for Expansion.



Top, Automatic Electric Valve Which Closes When Power Is Interrupted. 1. Balanced Disk Valve. 2. Solenoid Tip. Bottom, Arrangement of Control Valves: 1. Excess Pressure Relief. 2. Automatic Electric Valve Which Opens When Power Is Interrupted. 3. Reducing Valve. 4. Connection for Pop Valves.

would be automatically available at a time of electric interruption. Figure 1 shows the three steel gas storage tanks used which are 10′-0″ in diameter and 62′-8″ long and have a capacity of 150,000 cubic feet of gas at 150 pounds pressure per square inch. A 4″ extra heavy steel pipe conducts the gas from the tanks through a reducing valve and an automatic electric valve to the distribution main.

The necessary pressure on the distribution system is maintained under routine operation by the use of a by-pass control. In case of a power interruption it is necessary to close this by-pass, otherwise there would be a wastage of pressure. This point is taken care of by the use of a solenoid-operated valve. This valve automatically closes when the power goes off. The tanks are recharged when necessary by a small 94 cubic feet per minute Ingersoll-Rand Compressor.

The development of this project involved considerable pioneer work in design and construction. The tanks are unusual and of heavy construction, 1-1/16″ steel boiler plate with 1¼″ rivets, manholes with special gas-proof gaskets, special pop valves to withstand gas leakage, and condensate drawoffs. The piping, fittings and valves are extra heavy and must withstand sudden and extreme expansion conditions due to sudden temperature changes. The tanks, being located outdoors, subject the large surface exposure to sunshine and consequent temperature changes. Aluminum paint was used in covering these containers to minimize the increase in pressure due to sun expansion.

One of the most interesting developments is the design of the automatic electric valves. There are two of these valves in the system, one which automatically opens when the electric power fails, and one which closes at the same time. In principle, these are balanced spring disc valves which are actuated by counterweights, released by solenoids when the power is interrupted. In connection with these valves, signal alarms are installed to warn the operator. The electric cir-

cuits are provided with proper relays to protect against phase disturbance.

Each tank is provided with two 2" pop valves to protect against sun expansion, and the East Rochester system is protected by three 4" excess pressure valves. Proper protection is also provided at the small charging compressor.

The tanks were filled with gas and placed in operation on April 1, 1925, but it was not until June 5, 1925, that there was an electric interruption. At 4:30 p.m. on June 5th the automatic siren alarm warned the operator that there was an electric interruption. Within a few seconds he had reached the compressor room and found that the large compressor had stopped and that the two electric valves had functioned, thereby feeding gas from the tanks into the East Rochester system at the required pressure. At 4:40 p.m. the electric service was restored, the large compressor started up and the routine operation resumed.

Since then there have been other electric interruptions and each time the automatic system has functioned successfully. The system as it stands can withstand an interruption of four hours' duration, the period of maximum load, and comprises a reliable "stand-by" unit of gas distribution in case of temporary failure of the regular system.

Welded Steel Sleeves for Cracked Mains

THE accompanying photograph shows a new wrinkle in the repairing of cracked cast iron mains which was tried out for the first time in April, 1925, by the Portland Gas and Coke Company of Oregon. Up to this time the usual procedure in preparing cracked cast iron mains has been to install a cast iron split sleeve. The use of this split sleeve has a number of disadvantages, the principal one being that it is difficult to make a tight joint along the contact between the two halves. Use of these split sleeves also requires either a stock of different size sleeves on hand or a considerable delay in fabrication of the sleeve whenever a break occurs.

In order to overcome these objections to the cast iron sleeve a successful experiment was made with a welded steel sleeve. This sleeve was simply a steel cylinder slightly

Repairing Cracked Cast Iron Mains

larger than the pipe and made in two parts. The two parts were fitted around the pipe and electrically welded in place, the open ends being caulked with lead in a similar manner to the procedure with the cast iron sleeve. The leak was stopped temporarily by means of soap and leakage tape while the work was being done.

The entire operation was completed in a few hours, and if it had been an emergency the time could have been still further shortened. The steel sleeve was made from ordinary plate and a similar one can be made up at any time without the necessity of carrying special material in stock. Welding of the two halves eliminated all chance of leakage at the point where the greatest trouble was experienced with the cast iron sleeve. The use of the steel sleeve was very satisfactory and similar cracks in cast iron mains in the future will be handled the same way.

CURRENT NEWS item under a Minneapolis date line:

Mrs. Minnie Peterson had obtained a divorce, the case going by default.

"Do you want your maiden name back?" asked Judge Guilford.

Mrs. Peterson hesitated a moment, and replied:

"I'd like it, but I don't think I had better do it. The gas meter is in the name of Peterson and I had better keep it that way."

BRIEFS FROM PITTSBURGH

AN investigation to determine the distillation products of low-temperature carbonization of Utah coals at various temperatures and under different conditions will be undertaken by the Bureau of Mines, Department of Commerce, at its Pittsburgh experiment station. The following conditions will be studied: Distillation in atmosphere of superheated steam, in atmosphere of preheated natural gas, in atmosphere of products of combustion of natural gas, and distillation by external heating retort.

Another investigation has as its object the determination of the identity and amount of the major constituents of the oil vapors in the gas and of the tar from low-temperature carbonization of coal.

COMPOSITION OF COAL TARS

A STUDY of the comparative composition of various coal tars is also being conducted. The purpose is to apply analytical methods now practically standardized by the Bureau to representative tars from various sources, obtaining thereby a uniform comparison of their composition and value. At present there are no reliable analytical data available which will serve as a basis for comparison and evaluation of coal tars, particularly low-temperature tars. Six tars were selected as representative of the best known low-temperature carbonization methods employed in this country. These have been subjected to uniform methods of analysis developed in the Bureau of Mines laboratories, and the results compared with those obtained for a coke-oven tar and a water-gas tar.

SENSITIVITY OF COALS

AN INVESTIGATION to determine the sensitivity of various coals and coal constituents by the critical temperature method and also by the calorimetric method is being conducted by the Bureau of Mines in cooperation with the Mines Safety Research Board of the British Government. An effort will be made to obtain more data on the purely physical factors involved, of ventilation, heat flow, moisture, etc.; and to develop practical application of the theories of auto-oxidation. Work already done has shown that all bituminous coals when dry will heat to ignition from temperatures around 35° C. provided adiabatic conditions are maintained and sufficient oxygen is applied. Below 35° C. their behavior is still uncertain. If the coal contains moisture, it may heat or cool, depending on its saturation relative to that of the air or oxygen supplied.

CONSTITUTION OF COAL

RESEARCH ON THE CONSTITUTION of coal, cannel coal, boghead coal and oil shales is being continued by R. Thiessen, research chemist at the Pittsburgh, Pa., experiment station of the Bureau of Mines, Department of Commerce. The purpose of the investigation is to study the structural, chemical and physical composition of coals and bituminous shales. Such knowledge is of recognized importance in the coking, and recovery of by-products in coals; in the distillation of oil shales, and the recovery of their products; in the experimentation of liquefying coals, and in the most efficient utilization of the fuels. A detailed study of the origin of coals and bituminous shales is being continued. At present the study is being centered on how far the plant compounds were changed, and what compounds have remained unchanged during peat-forming and transformation into low-rank coals.

A. G. A. OPERATING SERVICE BUREAU

THE AMERICAN GAS ASSOCIATION has instituted through the Carbonization Committee an operating service bureau. This bureau has not been used by the members to the extent that its potential value would indicate it should have been.

A sub-committee has been appointed to handle this bureau. The committee is composed of men with wide experience in operation of all types of plants and are, therefore, in position to give helpful information on all operating conditions. The committee intends to call on any one whom they feel can aid them in any problem.

The committee urges all members of the Association who have some problem giving concern to refer it to this committee who will endeavor to answer or find some one who can give the information desired.

All communications will be held strictly confidential and no information given as to the source of any question.

The American Gas Association was organized to be of benefit to its members and this is one of the means of deriving this benefit.

The convention floor is available once a year and does not provide the opportunity any longer for solving service problems, as convention time has become too valuable.

Let this committee share your troubles. Mail to H. W. Hartman, Secretary of Technical Section, who will forward them to the committee.

A GAS MAN interviewing a laborer who had applied for work at the plant, asked him if he had had any experience in the gas business.

"Certainly," said Pat.

Thinking he'd prove the statement, the man said: "Then suppose you wheel me out a barrow-load of gas."

"I will," said Pat, "provided you load it up for me."

Associations Affiliated with A. G. A.

Canadian Gas Association
Date of Affiliation—Mar. 25, 1919.
Pres.—J. J. Humphreys, Montreal Light, Heat & Power Co., Montreal, Que.
Sec.-Tr.—G. W. Allen, 7 Astley Avenue, Toronto.
Conv., Montreal, Que., July 8 and 9, 1926.

Empire State Gas and Electric Association
Date of Affiliation—Nov. 21, 1919.
Pres.—E. C. Scobell, Rochester Gas & Electric Corp., Rochester, N. Y.
Chairman Gas Section—C. C. Atwood, The Brooklyn Union Gas Co., Brooklyn, N. Y.
Sec.—C. H. B. Chapin, Grand Central Terminal, New York, N. Y.
Annual Meeting, 1926.

Illinois Gas Association
Date of Affiliation—Mar. 19, 1919.
Pres.—R. E. Chew, Union Gas & Electric Co., Bloomington, Ill.
Sec.-Tr.—R. V. Prather, 305 Illinois Mine Workers Bldg., Springfield, Ill.
Conv., Springfield, Ill., March 17 and 18, 1926.

Indiana Gas Association
Date of Affiliation—April 24, 1919.
Pres.—H. J. Roach, Northern Indiana Gas and Electric Co., Crawfordsville, Ind.
Sec.-Tr.—E. J. Burke, Room 1314, Peoples Gas Bldg., Chicago, Ill.
Conv., 1926.

Iowa District Gas Association
Date of Affiliation—May 21, 1919.
Pres.—C. M. Benedict, Des Moines Gas Co., Des Moines, Iowa.
Sec.-Tr.—H. R. Sterrett, 551 Seventh St., Des Moines, Ia.
Conv., Des Moines, Ia., April 21-23, 1926.

Michigan Gas Association
Date of Affiliation—Sept. 18, 1919.
Pres.—B. G. Campbell, Consumers Power Co., Pontiac, Mich.
Sec.-Tr.—A. G. Schroeder, Grand Rapids Gas Light Co., Grand Rapids, Mich.
Conv., Mackinac Island, Mich., June 24, 25, 26, 1926.

Missouri Association of Public Utilities
Pres.—Wiley F. Corl, Community Power & Light Co., St. Louis, Mo.
Sec.-Tr.—F. D. Beardslee, 315 N. 12th St., St. Louis, Mo.
Conv., 1926.

New England Association of Gas Engineers
Date of Affiliation—Feb. 19, 1919.
Pres.—H. N. Cheney, Boston Consolidated Gas Co., Boston, Mass.
Sec.-Tr.—J. L. Tudbury, 247 Essex St., Salem, Mass.
Conv., Hotel Somerset, Boston, Mass., Feb. 24 and 25, 1926.

Gas Sales Association of New England
Date of Affiliation—Oct. 1, 1919.
Gov.—J. J. Quinn, Citizens Gas Light Co., Quincy, Mass.
Sec.—J. H. Sumner, 719 Massachusetts Ave., Cambridge, Mass.
Monthly Meetings.

New Jersey Gas Association
Date of Affiliation—April 25, 1919.
Pres.—H. D. Whitcomb, Public Service Electric & Gas Co., Newark, N. J.
Sec.-Tr.—R. A. Koehler, Public Service Electric & Gas Co., Newark, N. J.
Conv., 1926.

Oklahoma Utilities Association
Date of Affiliation—June 16, 1926.
Pres.—R. C. Sharp, Oklahoma Natural Gas Co., Tulsa, Okla.
Mgr.—E. F. McKay, Oklahoma City, Okla.
Conv.

Pacific Coast Gas Association
Date of Affiliation—Sept. 18, 1919.
Pres.—F. J. Schafer, Southern California Gas Co., Los Angeles, Calif.
Exec. Sec.—Clifford Johnstone, 447 Sutter St., San Francisco, Calif.
Conv., Los Angeles, Calif., 1926.

Pennsylvania Gas Association
Date of Affiliation—April 10, 1919.
Pres.—Wallace G. Murfit, Bucks County Public Service Co., Newtown, Pa.
Sec.-Tr.—Geo. L. Cullen, Harrisburg Gas Co., Harrisburg, Pa.
Conv., 1926.

Southern Gas Association
Date of Affiliation—May 20, 1919.
Pres.—S. E. Linton, Nashville Gas & Heating Co., Nashville, Tenn.
Sec.-Tr.—J. P. Connolly, 141 Meeting St., Charleston, S. C.
Conv., New Orleans, La., March 15, 16, 17, 1926.

Southwestern Public Service Association
Date of Affiliation—September 26, 1923.
Pres.—Paul E. Nicholls, Galveston Gas Company, Galveston, Texas.
Chairman Gas Section—H. E. Danner, Houston Gas & Fuel Company, Houston, Texas.
Sec.—E. N. Willis, 403 Slaughter Bldg., Dallas, Texas.
Conv., Galveston, Texas, April 13-16, 1926.

Wisconsin Utilities Association
Date of Affiliation—March 25, 1919.
Pres.—G. H. Wilmarth, Northern States Power Co., Eau Claire, Wis.
Chairman Gas Section—S. B. Sherman, Wisconsin Gas & Electric Co., Racine, Wis.
Exec.-Sec.—J. N. Cadby, 445 Washington Bldg., Madison, Wis.
Conv., 1926.

Geographic Divisions

Eastern States Gas Conference
Date of Formation—April 11, 1923.
Pres.—W. Griffin Gribbel, John J. Griffin & Co., Philadelphia, Pa.
Sec.-Tr.—R. A. Koehler, Public Service Electric & Gas Co., Newark, N. J.
Conv., Bellevue-Stratford Hotel, Philadelphia, Pa., April 21 and 22, 1926.

Employment Bureau

SERVICES REQUIRED

DESIGNER—Well known manufacturer of high grade gas burning appliances has a position open for a competent man for experimental work and design of gas stoves, radiant heaters, tank water heaters, etc. Must be a practical man experienced with gases of various kinds and qualities. State fully your training, experience and salary expected. Adress A. G. A.
Key No. 062.

OPENING for Gas Works Chemist with large company in Southern California. Must be experienced, well qualified technical man. Some oil experience desirable. Address A. G. A.
Key No. 070.

LARGE COMPANY operating in Middle West desires to employ two Industrial Gas Engineers for Industrial Gas Sales and Survey Work. Will be employed on straight salary. State age, salary expected and past experience. Address A. G. A.
Key No. 071.

ENGINEER—Large operating company desires the services of an engineer with experience in the application of gas and the selling of industrial gas appliances. State age, past experience and salary expected. Address A. G. A.
Key No. 072.

WANTED by large gas company in middle west, salesman for industrial gas appliances. Address A. G. A.
Key No. 073.

WANTED: Young college graduates of mechanical and chemical engineering. Positions permanent, good opportunity for advancement. Address A. G. A.
Key No. 074.

LARGE Middle Western Gas Company desires to employ an industrial gas engineer to work in industrial gas sales department. One with sales experience on large high pressure installations preferred. State age, salary expected and past experience. Address A. G. A.
Key No. 075.

GAS COMPANY, operating within the suburban area of the Metropolitan District of New York City, wants services of well-trained, experienced Shop Foreman to handle its distribution and appliance work. State age, experience, salary expected. Give references, unless application is to be considered confidential. Address A. G. A.
Key No. 076.

WANTED—Meter repair man of good habits and some mechanical ability to do the work in a meter shop for a company having 6,000 meters. A good job—good pay—full time and good environment. A fine chance for a young man wishing to locate permanently. Address A. G. A.
Key No. 077.

SERVICES OFFERED

WANTED: Position by a Gas Engineer with twenty-three years' experience in all branches of the gas business and who has had experience in plant efficiencies and gas distribution problems. His connection with a strong operating company would make him a valuable man for a holding or a large operating company owing to his ability to reduce manufacturing and distribution costs. Would prefer position in the East. Address A. G. A.
Key No. 193.

PUBLIC UTILITY EXECUTIVE, with broad experience in engineering, management and finance desires position. Offers character, integrity and ability with service. Address A. G. A.
Key No. 196.

WANTED—Position as Manager or Engineer for a gas or gas and electric property by practical Gas Engineer thoroughly conversant with management problems, rates, industrial business development, design, construction and operation of coal and water gas plants, high and low pressure transmission and distribution. Considerable experience with electric power plants and natural gas properties. Technical education and twenty-two years' experience, fourteen years of which have been in gas and public utility work. Address A. G. A.
Key No. 197.

OPERATING ENGINEER desires communication with a utility property requiring the services of an operating engineer. Property either electric or gas or combined preferably in a medium size city with 25,000 customers or upward. Location preferably north central State or Canada. Position general superintendent or manager. Have had twenty-one years' active contact with operating problems of diversified nature in electric, gas, water and telephone utility service as cadet engineer, superintendent of distribution, chief engineer, general superintendent and manager. Am at present employed. Address A. G. A.
Key No. 198.

WANTED: Position as manager or superintendent of a coal, water or combination gas plant, by a technical man, thirty-five years of age, with thirteen years' all around gas experience. Services available upon reasonable notice to present employer. Address A. G. A.
Key No. 199.

POSITION—Sales Manager of new business on Domestic, Hotel and Industrial appliances, desires similar position with promising future. Fourteen years' experience from shop through all commercial departments of one of the largest Utility Companies in the East. Thirty-six years old. Single. Services available in two weeks. Address A. G. A.
Key No. 201.

TECHNICAL MAN—(34) desires position as manager or superintendent of gas plant in city of 20,000 to 50,000 population; have had twelve years' experience in gas business of which last six have been as manager of gas properties; experience as superintendent of high and low pressure distribution; business and technical education; married; available immediately; references from present and former employers; prefer South. Address A. G. A.
Key No. 202.

POSITION WANTED—High grade specialty salesman, specializing in sales of gas-fired boilers and automatic water heaters for past 15 years; will be open for sales position with manufacturer or gas company October 1, 1925; thoroughly conversant with all phases of water heating and house heating; best of references from post and present employers together with details of ability will be submitted; road experience, no objection to travel. Address A. G. A.
Key No. 203.

WANTED—Position as manager of relatively small gas company or as engineer of larger property. Coal or water gas. Young, technically trained engineer (chemical and mechanical) with 10 years' unusually broad experience in all phases of industry, including manufacture, commercial and industrial, wishes to locate with property in need of man who can show the kind of results that mean increased net earnings. Address A.G.A.
Key No. 204.

WANTED—Am open for position as appliance salesman with appliance manufacturer, experience covers over fifteen years in the sale of gas ranges, automatic water heater and heating appliances, or as manager of applance sales department with a gas operating company, experience includes executive and technical training. Married. Al references. Address A. G. A.
Key No. 205.

A COLLEGE GRADUATE, twenty-six years old, unmarried, three years' experience in operating plant with maximum daily send-out of 2600 M; fifteen months in charge of smaller plant and distribution, would like position with advancement. Address A. G. A.
Key No. 206.

AN ENGINEER experienced in the development of large volume commercial and industrial gas business is open for position as Utility Manager or department head. Record and references on file with A. G. A. Address A. G. A.
Key No. 207.

EXECUTIVE thoroughly experienced in coke oven and water gas manufacture, distribution of gas, sale of metallurgical and domestic coke, and engineer of wide experience with ability to deal with public officials and general public. Now open for engagement. Best of references. Forty-two years old and married. Address A. G. A.
Key No. 209.

WANTED—A position as General Manager of Engineer of Gas Property. Have had experience and can produce results in either large or small properties. Can give exceptional references on past record. Address A. G. A.
Key No. 210.

WANTED—Position as Gas Engineer or Superintendent of property serving 30,000 or more meters. Fifteen years' experience in high and low pressure distribution, coal and water gas production. Address A. G. A.
Key No. 211.

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